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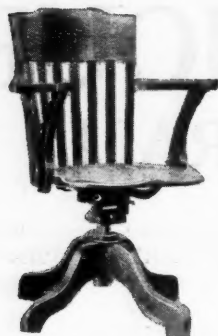
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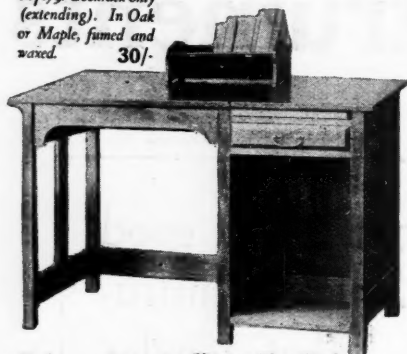


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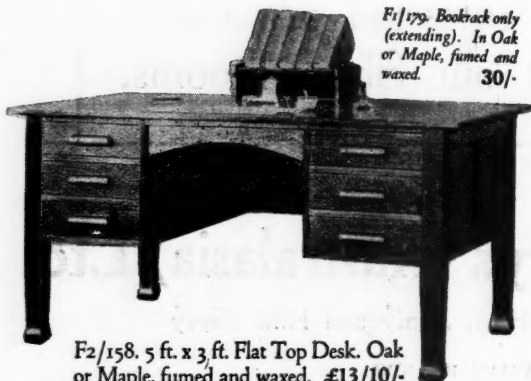
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ORTHOPÆDICS IN AMERICA.¹

By C. NIGEL SMITH, M.B. (Syd.), F.R.C.S. (Eng.),
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It is a very excellent custom in the Mayo Clinic that when a member visits other centres, he is required on his return to read a paper on anything of interest he has seen to the other members of the Clinic. As I have lately returned from a somewhat extended visit to Europe and America, I thought that I might follow that example.

The subject I have taken, American orthopædics, is, like most things American, a huge one, but I propose to deal only with a few of the more generally practicable ideas which came under my notice.

America at the present time is, in my opinion, pre-eminent in orthopædic surgery. The orthopædists have secured this pre-eminence by their great numbers, their capacity for work, their almost perfection of technique and, above all, by their "fertility in new suggestions and readiness to receive new ideas" (*The British Medical Journal*, July 7, 1923, page 30).

¹ Read at a meeting of the New South Wales Branch of the British Medical Association on November 30, 1923.

During my stay in America I watched mainly the work of Albee, Mayer and Hibbs, in New York; Lovett and Osgood, in Boston; Baer and Bennett, in Baltimore; Ryerson, Porter and Lewin, in Chicago; Henderson and Mayo, at the Mayo Clinic; Steindler, at Iowa City; Ellis Jones, in Los Angeles; and Burnell, in San Francisco.

The Orthopædic Specialist.

First of all I would like to express my appreciation of the great kindness universally shown to me by the profession in America. After the accepted formula of, "Pleased to meet you" (for which, by the way, I never found an adequate response) and the information that I "Sure, was a long way from home," one and all, even the busiest and most distinguished, spared neither time nor energy in their efforts to instruct, interest and entertain me. As a consequence my trip was rendered very enjoyable and I was enabled to see much more work than I did in a similar time in Europe.

All medical men who have been through the United States, will, I feel sure, support me in saying that any Australian graduate who goes there, will find the same courtesy and the same interest.

The value of orthopædic treatment generally and the great importance of early treatment is much more widely understood in America than elsewhere. In connexion with the former I may mention that

San Francisco with a population much less than that of Sydney has, I was told, twenty-two orthopaedic specialists. All through America large orthopaedic departments are to be found in the general hospitals, while in the larger cities special orthopaedic hospitals are common. A section of Freemasons are at the present time building ten new hospitals for crippled children throughout the United States, which they are thoroughly equipping and will maintain at their own expense. I had the pleasure of seeing two of them in Minneapolis and San Francisco and both were admirable. In connexion with early treatment Albee exaggeratedly says, to fix its importance in the minds of students, that if the accoucheur finds a congenial club foot in a breech presentation, he should begin manipulation before the head is delivered!

The general public have to a great extent been educated to its importance and it is rare to find a neglected case. I found one. In a Chicago clinic a boy of fifteen with a congenital dislocation of the hip came for the first time for advice.

By getting the cases early much simpler methods can be adopted, much time saved, many operations avoided and much deformity prevented that is practically impossible to correct at a later stage. To illustrate this point I need only mention congenital club foot, congenital torticollis and spinal tuberculosis. In all these operation can be avoided if treatment is begun early and a successful result can be promised almost with certainty; while if delayed operations of a severe nature will be required with no certainty of a good result and often the abnormal foot of the first, the facial asymmetry of the second and the hunch back of the third will be carried to the grave.

Standardization of Treatment of Fractures.

A subject that concerns the general practitioner and the general surgeon as well as the orthopaedist, was being widely discussed in America while I was there. It was the standardization of the treatment of fractures. The subject is too big to be discussed in this paper; I mention it here because its importance is so manifest that I would very greatly like to see the same plan followed in Australia. At a conference held in Boston in April, 1922, by men from various centres of the United States and Canada interested in fracture work, a syllabus was adopted for the simplification and standardization of fracture treatment. In an introduction to this syllabus it is stated that: "The apparent unanimity of the group (of surgeons) in all the essentials was so unexpected and seemed so important that it was determined to publish the syllabus as a guide." This was done in the *Archives of Surgery* (January, 1923).

Industrial Surgery.

Another subject that is receiving a good deal of attention, comes under the heading of what the Americans call "industrial surgery" and is the treatment of injuries of the back. These cases are proverbially unsatisfactory, a correct diagnosis is often difficult and treatment too often insufficient.

The points that are being insisted on in these cases, are: (i.) Skiagrams should be taken in two

planes even in patients who present few symptoms, to determine bone injury and pre-existing bone or joint disease. (ii.) A thorough physical examination as to pain, localized tenderness, loss of mobility, deformity, paraplegia and so forth should be conducted to determine the grade of the injury. (iii.) Adequate support should be provided for the back, varying with the severity from strapping in the mild cases through moulded jackets or corsets in the moderate cases to recumbency and extension in the severe ones. (iv.) Physio-therapy should be applied later in all but the mild cases.

Bone Grafting.

In New York Dr. Albee, the specialist in bone graft surgery, with whose book, table and motor saw many of you are familiar, gave me much of his time. I saw both him and Dr. Russell Hibbs do their respective fixation operations for spinal caries, concerning the merits of which opinion is divided. I preferred Dr. Albee's method on account of its simplicity and brevity in execution.

One thing which I saw Dr. Albee do, interested me greatly since it was somewhat in the nature of an experiment. It was an operation on a woman with a kyphotic transversely contracted pelvis, who owing to her deformity had had a craniotomy done on the infant in a previous confinement. She was again six months pregnant and Dr. Albee did a symphysiotomy, separated the two pubic bones and inserted between them a graft from the tibia over two and a half centimetres in length. Contrary to the general belief of the onlookers which I shared, that miscarriage would result, the patient made an uninterrupted recovery from the operation, but whether it was successful in its object or not I have not heard.

Tendon Transplantation.

The work of Dr. Leo Mayer, of New York, is an illustration of what can be accomplished by specialization in a small subject. He has devoted a great deal of his time to tendon and nerve surgery and has consequently been able to develop a technique which is well nigh perfect. He lays great stress in tendon transplantation on avoiding any unnecessary trauma and therefore adhesions in the neighbourhood of the new bed in which the transplanted tendon will lie. Whenever possible he uses the tendon sheath of a paralysed muscle as a bed for the transplanted tendon. For example, with paralysed peronei muscles he uses the sheath of the *peroneus tertius* tendon as a bed for the tendon of the *tibialis anterior*. On the same principle when he wishes to transfer a tendon from one fascial compartment of a limb to an adjoining one he makes a bed of sliding tissue across the inter-muscular septum. To do this parallel incisions, 2.5 centimetres apart and 7.5 centimetres long are made along each side of the septum with cross incisions at the top and bottom extending to the septum. Both sides are then folded towards the septum and the edges sewn together along it. He thus brings the underneath gliding surface of the aponeurosis uppermost. He then lays his tendon across this surface.

At the Johns Hopkins Hospital in Baltimore I saw some excellent results of arthroplasty done by Dr. Baer, in which he used a special preparation of the submucosa of the pig's bladder interposed between the bones.

I also saw an apparatus designed by Dr. George E. Bennett which struck me as very practical and which since my return I have used with benefit. It is an adjustable inclined plane made to fit on any Bradford frame, fashioned so that the pulley, frame and plane form a single unit to enable extension to be applied to the lower limb continuously in the same plane while nursing duties are performed and while the patient is moved from one place to another. Bennett has also done unquestionable service to the profession by drawing attention to the fact that loss of mobility in the knee joint in a certain percentage of cases is due almost entirely to extra-articular causes of which the chief are contractures and adhesions of the quadriceps tendon. He has devised an operation for lengthening and freeing the quadriceps tendon in these cases and was good enough to have put on the screen for me a cinema film illustrating his methods and results which were excellent.

This film method of demonstration is firmly established in America and France and is undoubtedly of particular service in the clinical teaching of operative surgery to students, enabling them all to see any number of times the various steps of an operation which they might not see at all or very occasionally and then imperfectly from the students' benches in an operating theatre. In orthopaedics also where posture, gait and range of motion enter so greatly into the calculation of disabilities and results of treatment, it is an unrivalled method of demonstrating the lesions which may have to be treated and the results which can be achieved.

Those of you who saw Dr. Royle's and Professor Hunter's demonstrations, will, I feel sure, join with me in making a strong plea for its much more extended use in this country.

Boston is a progressive orthopaedic centre. Bradford, Goldthwaite, Lovett and Osgood, names familiar to most, are all workers there. I saw a good deal of Lovett's work and greatly admired it. He has a large and very efficient staff which helps him considerably to get his good results, particularly in cases of spastic and infantile paralysis by muscle re-education methods. In scoliosis, also, his method seems to me to be the most promising that I have seen. He uses an alternation of jackets and stretching and exercises in the moderately severe cases; the exercises tend: (i.) to loosen the curved portion of the spine to make an improved position possible and (ii.) to aid in retaining the improved position by strengthening certain groups of muscles; the jackets serve to retain the gain secured by stretching and exercises.

Ryerson, Porter and Lewin, of Chicago, are all thorough in their work. I saw Ryerson do an arthroplasty of the hip in a case of double ankylosis from hypertrophic osteo-arthritis. It turned out to be an illustration of the great difficulties that may be met in such cases. Owing to the fact that the

disease had obliterated all trace of the acetabular cavity, it was impossible to find a landmark to indicate where ilium finished and where the neck of the femur began. It was nerve-racking both to the surgeon and myself when he was reaming out a new acetabular cavity to imagine he might be boring through a slightly wrong portion of the bone and at any second might perforate the pelvis. However, nothing untoward occurred and the patient will probably have the inestimable advantage over her previous condition of being able to walk. Lewin has become fully cognizant of the fact that patients with foot troubles are very grateful for prompt relief and he has fitted up a little workroom in his "offices" where by means of felt, glue and a knife he can in a few seconds fit patients' shoes with pads which make all the difference to their comfort.

At Iowa city Arthur Steindler has obtained striking results in the reconstruction of paralysed upper limbs. He has lately turned his attention to the lower limb and has devised an operation for the flail foot, which he describes as a pan-astragaloid arthrodesis. The operation has raised a good deal of criticism in America, but within the limits of its indications it has in his hands produced good results which I was privileged to see on the patients themselves and on the "movies."

I cannot speak too highly of the courtesy and help I received at the Mayo Clinic, particularly from Dr. M. S. Henderson, the head of the Orthopaedic Department. Of the Mayo Clinic itself so much has been written in its praise that it seems superfluous to say anything further. To those that have been there, there is no need on my part to reiterate its excellence; to those who have not, I can only say that it is an experience they certainly should not miss, an object lesson in ideal team work organization that will remain green in their memory throughout their career.

When we can copy the example throughout Australia set by the Mayo Brothers in Rochester, Minnesota, then we may be sure that we shall have reached the golden age of Australian medicine and surgery.

PROTEIN SENSITIZATION: ITS RELATIONSHIP TO ASTHMA, HAY FEVER, ECZEMA AND URTICARIA.¹

By D. L. BARLOW, M.C., M.D.,
Honorary Clinical Pathologist, Adelaide Hospital.

THAT such a relationship as is implied in the above title exists there is no longer any reasonable doubt, but the nature of the mechanism involved and its true importance in these morbid processes is by no means fully understood.

Even amongst the leading workers in this field of research there is only general agreement up to a certain point and in many respects there is considerable difference of opinion.

One of the main questions which must be answered, is whether protein sensitization is the chief underlying factor of all or even the majority

¹ Received for publication on October 8, 1923.

of cases of asthma and hay fever and on this point at present there can be no finality.

Chandler Walker⁽¹⁾ who has done very important work on the subject in recent years, thinks that a fairly large group of patients with asthma are non-sensitive. In regard to hay fever, however, there seems little doubt that all patients with typical signs are susceptible to the action of some pollen or pollens.

The writer intends to bring forward arguments in favour of the probability of protein sensitization underlying all cases of true bronchial asthma.

It cannot be too often repeated that considerable care is needed to differentiate dyspnoea arising from other causes, for example cardio-vascular or renal disease. By far the most frequent error lies in mistaking something else for asthma and in an asthmatic subject any symptoms due to disorders of the respiratory tract, such as acute bronchitis, are very apt to be attributed to the asthma.

Probably the most difficult cases are those in which a certain degree of chronic bronchitis and emphysema exist and dyspnoea occurs, varying in degree from time to time and thus appearing to come on in attacks.

In some of these cases there is a definite history of typical asthma at an earlier stage, whereas in others there have been the symptoms of chronic bronchitis for years and ultimately attacks of severe dyspnoea. It is in the latter class that the chief uncertainty will arise, for without doubt true asthma sometimes supervenes on a chronic bronchitis, whereas it seems equally certain that some of the cases have no real relationship to asthma. These cases can be better discussed after considering the nature of the processes underlying ordinary uncomplicated cases of asthma.

Ætiology and Pathogenesis.

There is now general agreement that the main factor in causing the dyspnoea is spasm of the unstriated muscle about the terminal portions of the bronchioles and that hyperæmia and œdema of the mucosa are of secondary importance. This muscle receives its nerve supply from the pulmonary plexuses which are derived from the pulmonary branches of the vagi and sympathetic branches from the third, fourth and fifth sympathetic nerves. Brodie and Dixon⁽²⁾ appear to have proved that only the vagi are concerned in controlling the bronchial musculature, but others consider that here as elsewhere a degree of antagonism exists between the vagus and the sympathetic, the latter supplying dilator fibres. Starling⁽³⁾ has shown that when the vagi are stimulated or in the presence of an abnormally high percentage of carbon dioxide or irritating vapours, the power needed to drive a certain volume of air through the lungs in a given time is greatly increased, thus indicating that contraction of the bronchial muscle has occurred. This no doubt is a protective reflex designed to minimize the inhalation of irritating substances.

In asthma and hay fever several possibilities have to be considered in regard to the method of production of the spasm. They are: (i.) Direct irritation by something in the inspired air, (ii.)

reflex irritation arising anywhere in the respiratory tract or elsewhere in the body, (iii.) the action of toxic bodies carried in the blood on the bronchial muscle-fibres and (iv.) the action of toxins carried in the blood on the vagal centre in the *medulla oblongata*.

Direct irritation certainly occurs in hay fever and may be of two kinds, namely the irritation caused by pollens to which the mucosa is sensitized, and mechanical or chemical irritation from dust, fumes *et cetera*.

Reflex irritation used to be considered the all important factor in asthma and the afferent impulses were thought to arise from almost anywhere in the body, but particularly the nasal and gastric mucosæ.

Whilst there is no doubt that such stimuli are often most important factors, yet it can no longer be maintained that they are able to produce their effects in the absence of an underlying sensitization. It is necessary to remember also that local lesions, such as nasal polypi, inflamed antra or tonsils, may be causing trouble by acting as foci from which bacterial proteins are absorbed, rather than by reflex irritation.

On the contrary, the effect of a cold draught in increasing the severity of an asthmatic attack and the effect of strong sunlight in augmenting the symptoms of hay fever are without doubt due to reflex irritation. Many instances of supposed reflex irritation from the stomach are really due to food sensitization.

There is considerable reason to suppose that some direct or reflex irritation may be the proximate cause when the underlying conditions are present. In a sensitized animal which has been re-injected with the corresponding protein, local irritation frequently produces a much more evident reaction than in a normal control animal. Asthma was not very frequent among the soldiers in the Great War as would have been expected if direct irritation were in itself the important cause, as they were so repeatedly exposed to an atmosphere containing irritant gases.

The mere fact that removal of septic foci, polypi *et cetera*, may relieve asthma is no proof that these were acting by causing reflex irritation. It is just as likely that they have been the sites of absorption of protein to which the individual was sensitized.

Very much has been said about the neurotic basis in asthma and no doubt it is true that persons of a highly-strung temperament whose response to stimuli of all kinds is apt to be great, do suffer from asthma more often than others.

However, it is natural to expect that whatever be the ultimate cause of the asthmatic spasm, it would be more severe in those who possess a highly responsive nervous system, but it may safely be said that many asthmatics are far from being neurotic in the accepted sense of the term.

If any proof were needed that asthma is not purely psychic, it would be found in the fact that the spasm often commences during sleep and the patient's first consciousness is of difficulty in

breathing. Moreover, the patient sometimes finds himself already sitting up on account of the dyspnoea when he awakens.

In regard to the possibility of toxic materials carried in the blood stream acting on the vagal nuclei nothing has been brought to light to suggest such an occurrence, but it has been thought by some that increased vagal activity or vagotonia is the underlying cause of asthma and that this is an inherited constitutional condition. Langdon Browne considers that the explanation of vagotonia is found in a lack of balance in the activities of the glands of internal secretion.

Evidence of such a state of affairs, however, is not forthcoming and the mere fact that adrenalin is so effective in relieving the attacks is no proof whatever that the attacks are due to a lack of it. So far as the ductless glands have been examined at autopsies on sufferers from asthma, no organic changes have been found. The writer has recently examined two bodies and found nothing abnormal. It is reasonable to believe, however, that if such lack of balance should exist, the development of asthmatic attacks would be favoured. There are two ways in which substances carried in the blood stream may act on the bronchial muscle-fibres, namely by direct stimulation or indirectly through the anaphylactic mechanism. It has been often supposed that toxic materials absorbed through the intestinal tract cause asthma by acting directly on the bronchial muscle-fibres, but no evidence of such absorption of toxic bodies has been proved.

Maxwell⁽⁵⁾ in his recent paper has discussed the importance of a hypersensitive condition in asthma and has described the leading features of anaphylaxis. It has been shown that in hay fever and asthma as well as artificial sensitization antibodies are formed corresponding to the protein involved.

Dale and Kelleway⁽⁶⁾ showed that on re-injection of an animal with the sensitizing protein the characteristic response was produced by combination of the protein with the antibody actually in close relationship with the muscle cells.

Besredka⁽⁷⁾ supports this conclusion, but also considers as a result of experimental work that an interaction of protein and antibody in the blood-stream sometimes produces anaphylactic symptoms by releasing toxic bodies.

Thus it is not quite settled what exactly occurs in the production of an asthmatic seizure or in hay fever. Perhaps a more important practical question is whether all cases of true asthma have a basis of sensitization or not. In hay fever it is almost invariably possible to demonstrate sensitization to pollens by the skin tests. Maxwell has shown this to be true in Australia in a large series of cases and with this the writer's experience corresponds. In the latter wild grasses, especially rye grass and cape weed and some of the garden flowers, especially daisy, sunflower and cosmos, have appeared to be the most frequent offenders.

So far evidence of sensitization in true asthma has been found in about 50% of asthmatics and with this local experience agrees. No satisfactory explanation of the remaining cases exists, but there

are some facts in favour of the suggestion that they are really due to sensitization which is difficult to demonstrate. The question of the relationship of bacterial sensitization to asthma is still quite an open one, but in the writer's opinion this is a more frequent cause of asthma than is generally realized.

Three instances of sensitization by streptococci have been encountered during the past year. In none of these was the patient sensitive to anything else. In one a most definite skin reaction occurred with dried mixed streptococci; in the other two there was no response to this test, but after several strains of streptococci had been isolated from the sputum and the test repeated with emulsion of these, a strain was found in each instance to which the patient reacted strongly. A vaccine made from the corresponding strain caused rapid improvement in both patients.

The almost invariable occurrence of an eosinophilia in the blood in asthma appears to suggest strongly that a similar mechanism is involved in all patients with true asthma, that is to say that all have an underlying basis of protein sensitization.

So far no exception has been encountered in the patients examined by the writer, although several have failed to show an eosinophilia during an inter-current attack of bronchitis. When these patients were subsequently examined, a definite eosinophilia was detected. In hay fever, too, eosinophilia appears to be invariable and it will be recalled that urticaria is often accompanied by this blood condition. As to other causes of eosinophilia parasitic infections are the chief and in many of these there is evidence that a condition of hypersensitiveness is set up. The fact that eosinophilia occurs almost entirely in conditions of proved hypersensitiveness led the writer to ascertain whether anaphylactic symptoms caused artificially in animals were accompanied by a similar blood change. This proved to be the case with guinea pigs injected and re-injected with horse serum, the eosinophile cells rising from about 6% to proportions varying from 20% to 28%.

There appears to be no known explanation as to why an eosinophilia should accompany any of these conditions, but it would seem likely that it plays a part in dealing with the products of interaction of foreign protein and antibody.

It is stated that the eosinophile percentage is highest at the height of an asthmatic attack, but this is not invariable, for the writer has found in one case carefully studied in this respect that the lowest percentages were recorded during the attacks and the highest just as the attacks were abating.

In another typical case the eosinophile percentage was found to rise as the attack was passing off, so that it is evident that this point requires further study.

Whilst considering the question of sensitization in asthma it is to be remembered that a response to the skin test does not necessarily occur when a particular protein is causing the symptoms. Apparently the skin is not always sensitized. In the light of our present knowledge it is possible that the bronchial muscle may be sensitized and not the

skin, but failure in the technique of the test is a factor to be reckoned with.

Aaron Brown⁽⁸⁾ found in testing patients with dried extracts and fresh fluid extracts that the latter gave rise to many more reactions and that these corresponded with the clinical experience of the cases. At present such fluid extracts are not on the Australian markets. The interpretation of the reactions is important as positive responses vary considerably in different individuals and when a patient is found to be sensitized to some protein, it does not always follow that this is the chief cause of the symptoms. The case must be considered in all its aspects.

Treatment.

General measures of hygiene *et cetera* are well known and should be attended to in all cases.

In the attacks probably adrenalin is not yet sufficiently utilized. It has not been found that this drug ever causes permanent arterial changes as was formerly feared. Special treatment depends on whether the patient has been found to be sensitive to foreign protein or not. If a food protein is at fault, this can usually be omitted from the diet. Sometimes tolerance can be gradually established by taking at first minute then gradually increasing amounts. Where epidermal proteins give rise to symptoms these can usually be avoided, but with horse-asthmatics desensitization is often indicated and can usually be accomplished by the use of subcutaneous injections of diluted extract made from dandruff in suitable doses. With pollens subcutaneous injections are generally successful in causing considerable improvement.

Vaccines appear to be specially successful in treating patients who are found to be sensitive to some individual micro-organism usually streptococcus or staphylococcus.

However, relief is often obtained by the use of autogenous vaccines prepared from naso-pharyngeal secretion or sputum, even where sensitization can not be proved. It is true that relief may only last for six months or a year in some cases, but usually further treatment results in another period of freedom which is well worth the trouble involved.

Eczema and Urticaria.

Here again there is no doubt that many cases are due to sensitization, but the frequency of the latter as a cause is far from certain. Cases are encountered in which skin-testing reveals sensitization to a single protein and when the latter is avoided, the whole condition clears up. In other cases although the patient reacts to one or several proteins, it is difficult to attribute the condition to this and treatment so far is not so successful.

There are, however, many cases in which no skin reactions are obtainable, and as yet the aetiology of these is unknown.

Barber,⁽⁹⁾ of Guy's Hospital, has recently drawn attention to the probability of focal infection playing the most important part in many cases.

Conclusions.

(1) In asthmatic children skin tests should always be done to determine if possible the causative protein.

(2) Typical cases in young adults should also be investigated on these lines and in older people where any suspicion of sensitization exists an attempt should be made to confirm this.

(3) In hay fever tests should always be carried out.

(4) Treatment by protein injections is indicated in asthma or hay fever due to pollens or bacterial sensitization and in some cases of sensitization to epidermal proteins.

(5) Vaccines are often useful in cases of unknown aetiology.

(6) In urticaria and infantile eczema the presence or absence of food, epidermal or bacterial sensitization should be determined before proceeding with treatment.

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SOME RECENT DEATHS UNDER ANÆSTHESIA.¹

By CUTHBERT HALL, M.D., Ch.M.,
Parramatta.

ALTHOUGH not so much publicity has been given in recent years even in medical journal to deaths under anæsthesia, still they occur frequently enough to make the subject a most vital one for discussion at a medical association meeting and it is the fatalities that occur in our midst that are most instructive to us in our work. In the first six months of 1923 I had, as Government Medical Officer for Parramatta, to carry out *post mortem* examinations on no less than three bodies of persons who had died during surgical anæsthesia. In 1922 I made one such examination and the late Dr. Bowman had to investigate one in 1920; these form the basis of this paper.

In brief the circumstances were as follows:

(1) A woman, married, aged twenty-two years, had undergone extraction of four teeth. The anæsthetic agent was ether. Death occurred ten minutes after as a result of suction of blood into the larynx. (2) A woman, married, aged twenty-four years, had undergone extraction of teeth. The anæsthetic agent was chloroform. Seven teeth had been extracted when she collapsed and died. *Post mortem* a considerably enlarged thyroid gland was found; the

¹ Read at a meeting of the Central Western Medical Association (New South Wales) on September 26, 1923.

other organs appeared to be healthy. (3) A boy, aged ten years, had been subjected to chloroform anaesthesia for the operation of removal of adenoids. His breathing had stopped immediately after the operation. *Post mortem* examination revealed nothing of note. (4) A married woman, aged thirty-nine years, had undergone an operation, an exploratory abdominal section. The anaesthetic used had been chloroform followed by ether given by the open method. The patient had stopped breathing before the operation was commenced. All measures at resuscitation including direct massage of the heart through an incision at the border of the left *rectus abdominis* had failed. *Post mortem* examination had revealed gall stones and adhesions about an old scar in the middle line below the umbilicus. (5) A man, aged fifty-one years, anaesthetized with chloroform for an operation for the removal of discharging unerupted wisdom teeth. The breathing had stopped one and a half minutes after the beginning of the operation. The *post mortem* examination revealed nothing of special note.

I must first remark that all these fatalities happened after a short period of anaesthesia and all but one for minor operations. The patients were in fair average health and following their daily work. Three out of the five operations were dental extractions. The first fatality which was caused by ether, was due to blood being drawn into the trachea and cannot be classed properly as a death due to the anaesthetic. Attention must, however, be called to the necessity for having the head quite horizontal and turned to one side. I am almost inclined to suggest the Trendelenburg position when much bleeding is expected. Certainly where facilities exist the intra-tracheal method of applying ether would be better. In one of the other cases chloroform followed by ether was given as the anaesthetic. Personally I do not like this sequence. There is always a period of danger and uncertainty if a considerable depth of chloroform anaesthesia has first been attained until the anaesthetist is quite certain that all the chloroform has been eliminated. It is absolutely imperative that the lint on the mask should be changed before the administration of ether is begun. I have found the administration of ethyl chloride as a preliminary to ether given either by the open or closed method a far more satisfactory and safer proceeding.

There now remain for consideration three other cases, two dental extractions and one for removal of adenoids. Now why should chloroform be so lethal in these short and in many cases light anaesthesias?

First it is necessary to consider the purity of the drug. We are told that chloroform liquid if exposed to light or the vapour of chloroform if exposed to flame oxidizes to produce phosgene, an extremely toxic gas. Therefore the manufacturers add 1% of ethyl alcohol to chloroform to act as a reducing agent and to prevent the formation of this gas. It is conceivable that bottles of the anaesthetic if handled a lot and exposed to light and air might allow the alcohol to evaporate and the toxic phosgene to form. Every care must be taken to prevent this. Dark coloured bottles should always be used.

Now as to the administration. Let us first remember the conclusions of the Committee of the British Medical Association of 1910:

- (i.) A 1% vapour is insufficient to induce surgical anaesthesia in an adult.

- (ii.) A 2% vapour is sufficient to induce full surgical anaesthesia.
- (iii.) In pathological conditions the dose is usually below 2%.
- (iv.) The dosage for maintenance of anaesthesia may be set down as 1% and less later on. In alcoholic patients 3% or even 3.5% have been found insufficient for induction. On the other hand 0.75% has been found sufficient to keep a patient anaesthetized for the last ninety minutes of a two and a quarter hours' operation.

All the four chloroform patients in my series appear to have passed out just about at the period of full anaesthesia when we may take it the anaesthesia had been pushed for two or three minutes previously and a fairly concentrated dose given and on the open mask we have no way of knowing whether a 2% or 6% or 7% concentration is being administered. With a high percentage it can readily be seen how half a dozen breaths may take a patient from a comparatively safe to a highly dangerous degree of anaesthesia. Hence the paramount importance of curtailing the amount of anaesthetic on the mask once the third stage is entered on. Moreover, in these mouth, nose and throat operations there is always a degree of interference with respiration when the gag is introduced and the tongue pressed back against the pharynx. This is frequently seen in removal of tonsils and adenoids under ethyl chloride, during which for perhaps fifteen to twenty-five seconds the child will make ineffectual attempts at respiration, but when the operation is finished and the child is turned over, normal respiration is speedily recommenced.

Wagh, of London, in his operation of enucleation of the tonsils provides for this obstruction by passing a thread through the tip of the tongue and drawing it forward and by keeping the patient anaesthetic with chloroform from a Junker's inhaler. I consider this to be the main reason why he can show such wonderful results in regard to anaesthetic safety. For dental operations under chloroform the tongue should be similarly held forward by a thread or tissue forceps or a vulsellum. We must remember that chloroform is a much heavier vapour than either ethyl chloride or ether and if it has been given in a high concentration and the respiration is then interfered with for ten or twelve breaths, the heavy gas tends to sink or be drawn down into the bronchioles especially in the semi-upright position; an overdose reaches the blood with a diminution of oxygen and excess of carbon dioxide, and so we see how the vital centres can be speedily paralysed.

In chloroform anaesthesia the anaesthetist must watch every breath from first to last and see that the patient has, if possible, unobstructed respiration. It is so easy to incriminate the patient's idiosyncrasy or reflex heart failure from nervous dread or some constitutional condition as hyperthyroidism as the cause of a sudden death, but we must always remember that we are dealing with a very lethal weapon whose function is to paralyse nerve cells in a certain order from the higher to the lower and that it only requires a quicker than usual transition from a sudden increase in concentration

or other cause to lead to a fatal result. In fact, the question may be asked: Is the accepted order necessarily followed in every person? Are not the medullary centres in some persons equally susceptible with the higher centres?

Reflex vagal inhibition of the heart has been blamed by Embley for these sudden stoppages in light anaesthesia. But Levy found that by injecting suprarenal extract intravenously in animals under light chloroform anaesthesia a sudden stoppage of the heart could be produced, this stoppage being due to ventricular fibrillation. Therefore it is highly dangerous to administer adrenalin before or in the early stages of chloroform anaesthesia, a practical point that all should bear in mind. In fact it makes me wonder whether the practice of injecting adrenalin direct into the heart muscle in cases of collapse under chloroform should not be avoided under any circumstances. Struggling and excitement or even stimulation of sensory nerves are said to induce hypersecretion of the suprarenal gland when under the influence of chloroform and so conduce to ventricular fibrillation. Levy, therefore, concludes that death from fibrillation may be observed under the following conditions:

(i.) During the induction and early stages of administration, (a) during struggling and excitement, (b) on removal of the chloroform, (c) on abrupt re-administration or sudden increase when under light anaesthesia; (ii.) during operation, by strong sensory stimulation under light anaesthesia; (iii.) after operation, on removal of the chloroform, especially after a short operation.

These conclusions give great food for thought and, it seems to me, reveal the reasons why more than one of the patients under consideration died. It seems better to assume that there is a physical rather than a psychical factor in the causation, as has so often been done in the past. Therefore, we should strive for an even administration of the drug, non-interference with respiration, a full anaesthesia and the avoidance of sensory stimuli.

Since writing the above I see that the Report of the City Coroner of Sydney for 1923 gives the number of deaths under anaesthesia as twenty-five. Surely this is a larger number than should be and every effort must be made to diminish the risk the patient undergoes when anaesthetized.

Reports of Cases.

TUMOUR OF THE CAUDA EQUINA.*

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Clinical History.

J.K., a married man of sixty-seven years, applied for treatment at the Royal Prince Alfred Hospital on March 14, 1923, complaining of incontinence of urine for about ten weeks. He stated that he was capable of passing

urine voluntarily, but that frequently, both by night and day, urine dripped from his bladder without his knowledge. He complained also of haemorrhoids.

Inquiry elicited the information that he had worked as a blacksmith and was in good health until two years previously, when he observed a weakness of both legs and especially the right leg. At night he would suffer from cramps in his thighs and legs, lasting a minute or more, very severe in character, but gradually passing off after rubbing. For a year he continued at his work, but as the right leg became weaker and the cramps persisted, he abandoned the smithy and took a position as night watchman.

Early in January, 1923, urinary symptoms became manifest. His first indication of these was a wetting of the bed at night. Then during the day micturition became precipitate. He could not retain urine for any longer period than an hour. In March urine came from his bladder without his being conscious of the act and frequently on the very slightest exertion. Shortly after he commenced attendance at the hospital, the incontinence became complete, so that at present when in the upright position the urine falls in a continuous drip from his urethra.

His complaint of haemorrhoids led to an examination of his anal canal. It was found that the anus was patulous and the anal mucosa visible. There was complete atony of the anal sphincter, so that in the course of an examination *per rectum* the gloved finger could be passed readily and rapidly in and out of the anus without any resistance or discomfort on the part of the patient.

Systematic examination of the nervous system showed that his psychical and speech functions were not disturbed and that his cranial nerves were intact. No definite weakness or wasting of his left leg was obvious, but the motor functions of his right leg were markedly impaired. There was an apparent slight wasting of all the muscles of the right leg, both on the flexor and extensor aspects, but the atrophy of the muscles on the extensor aspect of the leg was profound. Whenever he walked, he was troubled by the repeated friction of his toes on the ground. An apparatus had to be applied to prevent foot drop by keeping his foot in extension. On the right side there was atrophy of the *tibialis anticus* (marked), *extensor digitorum longus* and *extensor hallucis longus* muscles; perhaps slight wasting also of the intrinsic muscles of the foot, flexors of the toes and gastrocnemius and soleus muscles. The wasting of the anterior tibial muscle was, however, the most profound. All these muscles are supplied by the peroneal and tibial nerves, derivatives of the sacral plexus, which issues from the fifth lumbar and first, second, third, fourth and fifth sacral segments of the cord. There was evidence of wasting of the gluteal muscles, supplied by the same plexus.

The flaccidity and atony of these muscles suggested a lower motor neurone lesion, so far, at least, as the motor disturbance of the legs was concerned. The plantar reflex on both sides was flexor and the knee jerk was active, but not over-active, on each side. There was no exaggeration of the ankle jerk, no patellar clonus and no ankle clonus.

Careful investigation of his sensory distribution showed definite but not complete anaesthesia on both sides over the areas supplied by his first, second, third, fourth and fifth sacral segments. The anaesthesia over the saddle area was the most definite, but there was a well marked small anaesthetic area on the posterior aspect of the lower third of the left leg.

The condition of the organic reflexes has already been described. There was true, absolute incontinence of urine and complete paralysis of the *sphincter ani*. When the faeces were fluid, there was incontinence, but at other times there was no interference with defaecation. There was no disturbance of the genital function.

There was no response to the Wassermann test with the blood and with the cerebro-spinal fluid and the serological tests for hydatid revealed no abnormality.

* Read at a meeting of the New South Wales Branch of the British Medical Association on November 30, 1923.

The progressive character of the symptoms and signs suggested the diagnosis of new growth. The difficulty, however, was the localization of the neoplasm.

Comment.

Bing⁽¹⁾ places the centres for the closing and emptying of the bladder, that is to say, for the *sphincter vesicæ* and detrusor muscles respectively, in the grey matter of the third and fourth and possibly also of the fifth sacral segments of the cord. From the same segments arise the nerves which supply the *sphincter ani*. If Bing's views be accepted, the lesion must be located in the sacral region of the cord in view of the distribution of the anæsthesia and the gross interference with the organic reflexes manifested by the patient. The interference with the extensor musculature of the leg would, however, prove the condition not a true lesion of the *conus medullaris*, but one involving also certain elements of the *cauda equina* as they passed downwards in proximity to the sacral region of the cord.

Barrington⁽²⁾ who has carried out many experiments on the innervation of the bladder in cats and dogs neglects the influence of the true *sphincter vesicæ* in the prevention of urinary incontinence and attributes this function to the *compressor urethræ* muscle. He points out that although urine is held at the internal urethral meatus and the posterior urethra is closed until micturition commences, the contraction of the *compressor urethræ* is stronger than that of the plain muscle of the posterior urethra. In support of this view he points to our clinical experience that incontinence of urine does not occur in man after the operation of suprapubic prostatectomy when the posterior portion of the urethra as far down as the *verumontanum* is avulsed along with the prostate. The *compressor urethræ* is supplied by the pudic nerve which has its origin in the second, third and fourth sacral segments of the cord. In cats division of both pudic nerves causes incontinence, which varies in degree from the leakage of a few drops of urine to constant dripping of urine when the animal walks around. This condition is not made worse by division of both hypogastric nerves.

On the other hand, Gaskell⁽³⁾ to whom we owe the greater part of our present knowledge of the involuntary nervous system, varies from these authors in his description of the innervation of the sphincter system of the bladder. Barrington gives a similar explanation to that of Gaskell for the nerve supply of the detrusor musculature. This comes from the sacral outflow through the pelvic nerves which pass from the spinal cord in the anterior roots of the second and third sacral nerves to form a single nerve (the pelvic nerve) on each side. Each pelvic nerve passes direct to the bladder wall. Stimulation of the pelvic nerves causes a strong contraction of the bladder in all animals. Stimulation of both hypogastric nerves also causes contraction of the bladder, but this contraction is much weaker in quality and in some animals is limited to the trigone. The hypogastric nerves make their exit in the thoraco-lumbar outflow. Their influence is apparently of only secondary importance, so that the region of the cord concerned in the control of the detrusor mechanism of the bladder must be considered to be the sacral segments.

So far the two authors agree. Gaskell, however, insists that the excitator neurones to the *sphincter ani internus*, the sphincter of the bladder and the muscle of the urethra come in the mammal from the inferior mesenteric ganglion which is connected with the second, third, fourth and fifth lumbar roots in the lowermost division of the thoraco-lumbar outflow.

Such differences in opinion of expert physiologists makes the localization of lesions of the lower portion of the cord by the clinician a matter of great hazard. The eminence of Gaskell gives him a credit unrivalled by other observers, so that his opinions must be accepted until other observations have placed the question beyond dispute.

If we accept Gaskell's doctrines, the lesion in this case may be localized in the elements of the *cauda equina*,

interrupting the continuity of both lumbar and sacral fibres. The clinical evidence, however, would seem to support more strongly the views of Barrington, in which case the lesion would be localized in the *conus medullaris* with involvement of certain somatic fibres coming from the lower lumbar segments in the strands of the *cauda equina*.

References.

⁽¹⁾ Robert Bing: "Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord," Second Edition, 1921.

⁽²⁾ F. J. F. Barrington: "The Nervous Control of Micturition," *Medical Science*, December, 1921.

⁽³⁾ W. H. Gaskell, "The Involuntary Nervous System," 1916.

A CASE OF ACUTE HYDRAMNIOS SIMULATING AN ACUTE ABDOMINAL EMERGENCY.¹

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ONE morning recently I was called to see a patient admitted under my care at the Royal Hospital for Women, Sydney, and as there were some unusual features in the case, I think it may be interesting to bring it forward for your discussion.

Arriving at the hospital about mid-day I was first shown her attendant's letter in which it was briefly stated that his patient had "had three definite attacks in the appendiceal region in the preceding forty-eight hours, the first one with vomiting and very severe pain."

I then found out that she was a primipara, aged twenty-five years, with a previous uneventful pregnancy estimated at seven months. For a few days she had had vague dyspeptic symptoms and the attacks as stated above. However, at three o'clock that morning (nine hours before) she was awakened by sudden and very severe general abdominal pain with vomiting almost immediately afterwards. Pain and vomiting had persisted and were still features of the attack. There had been also an irritating cough with expectoration. Headache and giddiness were present and her panic was aggravated by the appearance two hours previously of a moderate gush of blood *per vaginam*.

On viewing the patient I found that she was supported semi-recumbent, in a great state of breathlessness and fear, her face was haggard from pain and distress, her colour was pale, rather ashy perhaps, but not exactly blanched, her lips dusky, her nose pinched, her tongue furred, white and dry and her skin cold and somewhat clammy.

The temperature was 35.8° F. (96.5° F.), the pulse irregular, soft and small tension and its rate one hundred and forty, blood pressure was one hundred and ten millimetres, the respirations forty in the minute, shallow and painful.

The cardiac and respiratory systems were in keeping with the chart, nothing more.

On uncovering her abdomen the very recent stræ, stretched umbilicus, absent respiratory movements and above all the enormous general uniform distension were particularly striking. Inquiry elicited the fact that the swelling had literally doubled in size within the last twelve hours; she certainly looked ten months pregnant.

Palpation as much as the very tender, resilient abdominal wall would allow, led me to believe that the main element of the enlargement was a very large uterus, but accentuated resistance and tenderness were very evident

¹ Read at a meeting of the New South Wales Branch of the British Medical Association on November 30, 1923.

in the right lumbar and iliac quarters. Ascertaining fluid thrills was difficult and inconclusive.

Percussion confirmed the expected central dullness with tympany in the flanks. Auscultation revealed nothing; even the fetal heart sounds were not to be heard. Vaginal examination rather unexpectedly showed the *os uteri* to be fully dilated, the membranes intact and bulging and a small head freely "ballotting." The urine collected (about sixty cubic centimetres) was highly coloured, acid with a trace of albumin and its specific gravity 1025; this did not seem to help us much.

Differential Diagnosis.

Her desperate state called for decisive action and we had first to declare for a diagnosis and succeed or fail accordingly.

Her abdomen had been prepared by the Sister for an expected laparotomy and this suggested considerations on the lines of (a) abdominal emergencies, (b) disasters of pregnancy and (c) general.

Abdominal Conditions.

Acute appendicitis came first to mind, mainly from the history of the case, the characteristic site and migration of the pain, the tenderness and the vomiting, but the chart and appearance suggesting peritonitis which, however, I did not feel prepared to accept on physical findings.

Acute peritonitis from other perforative conditions were with fair certainty excluded by the history and careful local examination.

Meteorism from causes such as acute obstruction was negated by the absence of extensive tympany, insufficient vomiting and it was known that bowel action was satisfactory.

Pyelitis was reasonably excluded by the history, chart and absence of kidney tenderness and sufficient urinary signs.

Disasters of Pregnancy.

The fact that she was thought to be seven months pregnant and the uterus appeared to correspond to a size over full time, the vaginal bleeding and examination were surely indications for serious attention.

Accidental concealed *ante partum* hemorrhage was suggested by the sudden pain, vomiting, immediate enlargement of the uterus, its tenderness, visible slight blood loss *per vaginam* and her collapsed state, but against this clinically she did not "look" like a patient with hemorrhage.

Multiple pregnancy did not explain the sudden enlargement nor her collapse.

Against hydatidiform mole were the rapid onset of symptoms late in pregnancy, insufficient bleeding and absence of the usual vaginal signs for mole.

Acute hydramnios was favoured by the cardiac, respiratory and gastric distress (pressure embarrassment), the subnormal temperature from nervous shock, the tense, tender, resilient, unnaturally large uterus for the period of pregnancy, the impossibility of fetal palpation and auscultation, but above all by the vaginal findings, full dilatation (possible from sheer internal pressure without labour), the considerable bulging of the membranes and the easy *ballottement* of a small fetus. Against acute hydramnios is its extreme rarity.

General Conditions.

General conditions such as heart failure, pneumonia or hemorrhage were not in the picture on account of absence of clinical signs sufficient for even passing notice.

I do not want you to take this very brief and sketchy differential diagnosis for one moment as an academic effort, but only the random reflections at the bedside of a worried man being pushed into quick action.

Summing up the situation I decided to stand by acute hydramnios and to institute treatment entirely obstetrical.

Now her really alarming condition by this time necessitated thorough equipment for all imaginable emergencies,

so that no precious moments would be lost, as it was difficult to foretell just what complications would arise, such as *post partum* hemorrhage. I had to persuade the reluctant resident medical officer to give her chloroform, and his apologetic reference in the clinical notes "chloroform (a few drops)" is also an indication of her parlous state.

Vaginal exploration confirmed the previous digital findings, but the translucent membranes at least showed there was no intra-amniotic hemorrhage. I now ruptured the membranes high up keeping my hand in the vagina as a plug, while several litres of liquor slowly came away. The presenting head, a small one, descended at once, but as the uterus was in a contraction and time was important for her, I lifted that head out quite readily with Simpson's forceps, delivering a very premature (1.13 kilograms or 2.5 pounds), but much alive fetus. Abdominally the uterus was still large and above the umbilicus, but firm.

By vaginal examination I discovered a second bulging bag of forewaters and treated this the same way by high picture and slow drainage of very excessive liquor; then a little foot being temptingly within reach I extracted as a breech the second (1.3 kilograms or 2.75 pounds) living fetus; both were males.

She was now out of her anaesthesia and much improved. Within a few minutes the third stage was over quite uneventfully, the placenta being a large single one.

Now her abdomen was gloriously flat, soft as could be, with no evidence of the slightest tenderness or resistance. The only "tumour" was the well-contracted uterus. The acute abdominal emergency was at an end.

It really was rather dramatic to see the extraordinary rapidity in the improvement of the woman. Quite at once after the third stage she was thoroughly comfortable, speaking freely, respirations easy at twenty-five, the pulse full, regular, running at one hundred and the temperature 36.6° C. (98° F.). All was over within an hour of the time I first saw her.

These small twins certainly had not made up the bulk of that great abdomen, but the flood of liquor, estimated at five to six litres, proved that hydramnios must have been the trouble, establishing the diagnosis.

It is interesting that recently we have had several patients with sub-acute and chronic hydramnios at the Royal Hospital for Women and these conditions have been often found associated with monsters or rather with congenital conditions like *spina bifida*, *anencephalus*, *ectopia vesicae*, hare lip or even with multiple pregnancy, prematurity and macerated fetuses (? syphilitic).

This case, of course, demonstrated the occurrence of hydramnios with twins.

I would be gratified if the members present would offer any advice or criticism on the case and its management.

NOTES IN THREE CASES OF ENDOCRINE INTEREST.

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The following three cases are regarded as being worthy of report on account of the involvement of the endocrine system.

Case I.—A.M., when the accompanying photograph was taken, was a child aged twelve years. She then weighed forty-six kilograms (7 stone 4 pounds) and was 137.5 centimetres (4 feet 7 inches) in height. Her face was large, her complexion was ruddy, the bones of the limbs were short and thick, the hands and feet were short and broad, with a tendency to clubbing. There was kyphosis of the spine, the bones of the face were not excessively large, but the lower jaw was rather heavy and the teeth

were widely spaced. The skin was smooth and moist, the hair of the head was of fine texture, the eyebrows were normal, there was no axillary hair, pubic hair was present at an early age and there was much hair growth on the limbs. The thyroid gland could be felt and seen and was distinctly enlarged, the thymus was not percussable, liver dulness was slightly diminished and there was no lymphatic enlargement, mammary development was great for the age of the patient. The pulse rate was sixty-eight per minute and the blood pressure in the recumbent position was one hundred and ten millimetres of mercury.

This child had begun to menstruate at the age of twelve months, did so regularly for six months and then about twice a year until eight years of age. Since then her periods have been regular. She is an epileptic, the attacks commenced when she was eight and gradually became more frequent and severe until at the time of admission she was having about forty attacks a month. Her mentality by Terman's tests is six years, quotient thirty-eight.

This condition of early puberty might be brought about by an excessive ovarian, suprarenal, pituitary and perhaps pineal activity.

Most if not all the cases produced by ovarian, suprarenal and pineal influence have been due to new growths of one of these organs. If such a new growth had been present in this patient it would before now have needed an operation or would have ended the patient's life.

An X-ray photograph of A.M. reveals a large *sella turcica* with a double base line. This double base line according to Cushing is seen only when the fossa is distended by an enlarged gland or growth.⁽¹⁾

It may be taken that the condition in this patient is primarily due to an excessive activity of the anterior portion of the pituitary gland and that this has stimulated the ovaries to early function. Her thick bone and hair growth over the body, the formation of the spine and teeth are also consistent with this. The child on admission was of average height for her age, but was about six kilograms (two stone) heavier than the given weight for age. During the past two years she has been under observation, she has only grown 1.25 centimetres and has gained 1.8 kilograms in weight. The early ovarian activity might be expected to cause an early ossification and cessation of growth.

Case II.—E.A., by comparison of the photographs, is seen to be much like A.M., but when the photograph was taken, was twenty-one years of age, whereas A.M. was only twelve years of age. Her clinical symptoms are very dissimilar. E.A. is also an epileptic. The attacks commenced when she was eighteen months of age in a series which left her partly paralysed in the left arm and leg. In these limbs there is now some atrophy. When admitted to hospital at twenty-one years of age, she was 148.5 centimetres (4 feet 11 inches) in height and weighed 54.5 kilogram (8 stone 9 pounds). She was short, thick set and fat, her skin was fair, smooth and moist. The hair of the head and eyebrows was normal and there was no abnormal hair about the body. The pulse rate was ninety in the minute. Blood pressure was one hundred

and five millimetres of mercury. The thyroid could not be felt. The thymus was enlarged. Mammary development was normal. Her mentality is six years and eight months and the quotient 41.1. Up to the time of admission she had only menstruated twice, namely in July, 1916, and December, 1917.

The X-ray photograph of the skull reveals a very small pituitary fossa, with the anterior and posterior clinoid processes much approximated. It makes an interesting contrast to the *sella turcica* of A.M.

This case can be looked upon as one of minus pituitary activity or *dystrophia adiposa genitalis*, producing a delayed puberty, adiposity, retarded development and perhaps the epilepsy. Cushing has noted that these conditions are often associated with epilepsy.⁽²⁾

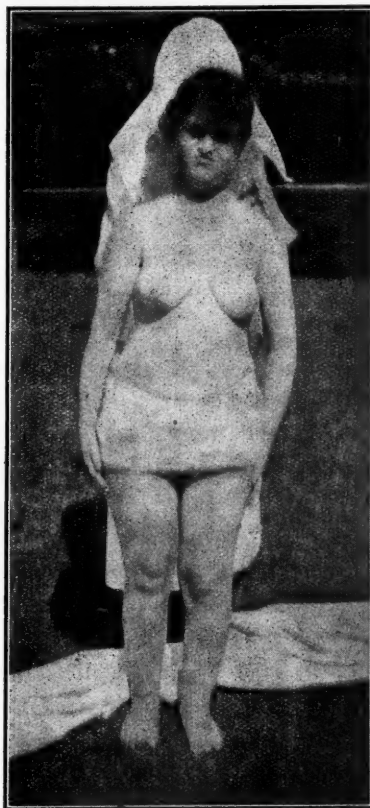
This patient was treated with calcium and bromide and with whole gland pituitary or oral pituitary; after two months' treatment menstruation reappeared. At one time early in the treatment administration of pituitary extract was discontinued for a month and the patient had amenorrhoea for four months. Since then she only occasionally misses a period. At first the fits greatly diminished in number and at one time remained in abeyance for eight months, but for the last eighteen months have been more difficult to control.

The fits in the first patient have diminished to between a half and a third of their former monthly average. In addition to the ordinary anti-epileptic treatment, she has received thymus gland extract and pancreatin under the supposition that these have a controlling influence over the pituitary and ovarian function.

Case III.—F.D., aged thirty-four years, was admitted to hospital in June, 1923. He had been a sailor and came from America to Sydney. Here he probably deserted, as for six months before admission he had been leading the life of a vagrant. He was in a very low asthenic condition, very dull and apathetic, would lie in bed with his head covered and if roused would become resistive and abusive. He was a man of one hundred and seventy-five centimetres (5 feet 10 inches) in height and he weighed sixty-three kilograms (ten stone).

He appeared ill and was very irritable, would pass urine and faeces in bed, was capable of rational conversation, but greatly resented being disturbed to answer

questions. His skin was dry and scaly more especially on the hands and face. The hair of the head was scanty, dry and thin, there was very little hair on the face, pubes and axillae and there was no hair growth on the body; the hair of the eyebrows was very deficient. He complained bitterly of the cold. There was no dermatographic reaction. The right eye was directed outwards, the right pupil was dilated and immobile, the left pupil contracted and immobile. The left *fundus oculi* showed blurring of the disc on the nasal side; in the right eye cupping of the disc on the nasal side was present. There was ptosis of the right upper lid. The thyroid could not be felt, nor the thymus percussed. The liver dulness was normal. The testicles were very small. Heart sounds were faint, pulse small and the systolic



CASE I.—The Patient, A.M.

blood pressure only seventy-five millimetres of mercury. There had for three weeks been intermittent vomiting. The knee jerks were exaggerated as were the plantar reflexes and there was right ankle clonus. Babinski's reflex was not present. The patient admitted having had syphilis and gonorrhoea. His extremely dull and apathetic condition together with the condition of the hair and skin and the extreme susceptibility to cold suggested a thyroid condition. The low blood pressure and vomiting indicated a suprarenal dystrophy, while the testicles were obviously atrophied and this might have had an influence upon the activity of either of the other glands.

The patient was first treated with thyroid extract 0.06 gramme and suprarenal gland extract 0.6 gramme daily. With this treatment he made considerable improvement, he became more active and less taciturn.

As a reaction was obtained in his serum to the Wassermann test he was given anti-syphilitic treatment from July 14 to October 3, 1922. The serum then failed to react to the Wassermann test. By this time he was active, strong and well, the eyes had become normal, the squint and ptosis had disappeared, the pupils were active and normal and the fundi were reported to be normal. His improvement was maintained and he was discharged as having recovered after six months' residence.

It would seem that in this case both the thyroid and the suprarenal glands were affected. His nerve lesions were clearly syphilitic and it is highly probably that the glandular affections were also of this nature.

References.

(*) Harvey Cushing: "The Pituitary Body and its Disorders," page 242.

(*) *Ibidem*, page 272.

Reviews.

BRAIN ABSCESS.

In his monograph on abscess of the brain Dr. Wells P. Eagleton has analysed his personal experiences in rather more than fifty cases of cerebral abscess and has added one hundred and twenty-five of cerebellar abscesses and one hundred and forty-five cases of frontal lobe abscesses recorded in the literature.¹ The author has aimed at correlating the surgical treatment with the pathological conditions found at operation and at autopsy. We are pleased to note the importance attached to accurate and careful history taking, an art too frequently overshadowed by enthusiasm for more elaborate and more highly technical aids to diagnosis. In the foreword the author emphasizes the minutely detailed technique outlined in the book, but on perusal the information on this aspect of the subject is not as informative as we should expect in a monograph on so specialized a subject. The details of the various operative procedures are set out in

small type and are not clearly and systematically described and the absence of accompanying illustrations or diagrams makes the text more difficult to follow.

In his endeavour to correlate surgical treatment with his observations on actual patients, he has so arranged the material of the book as to make it less readily useful for purposes of reference. Considerable overlapping and repetition results; the information contained could be compressed into much smaller compass.

In his classification of brain abscesses Dr. Eagleton has adopted a nomenclature which is unlikely to meet with general acceptance. According to the mode of entry of infection he uses the terms adjacent or secondary and intercurrent or tertiary. The terms used do not seem to be well chosen and do not correspond with their more generally accepted meanings in pathological terminology.

The chapters on the general diagnosis of brain abscess are well planned. The author attaches much importance to the initial vague rigor followed by a subnormal temperature and by repeated failure to recover bacteria from the blood. The localization of brain abscesses is also fully discussed. He is of opinion that these occur in situations more or less definitely corresponding to the extra-cranial focus. As valuable localizing signs much importance is attached to "naming aphasia" and transient or incomplete hemianopsia, especially for colours in temporo-sphenoidal lobe abscesses. The latter is said to be due to the involvement of the fibres of Meyer's tract in their course from the cuneus to the pulvinar region.

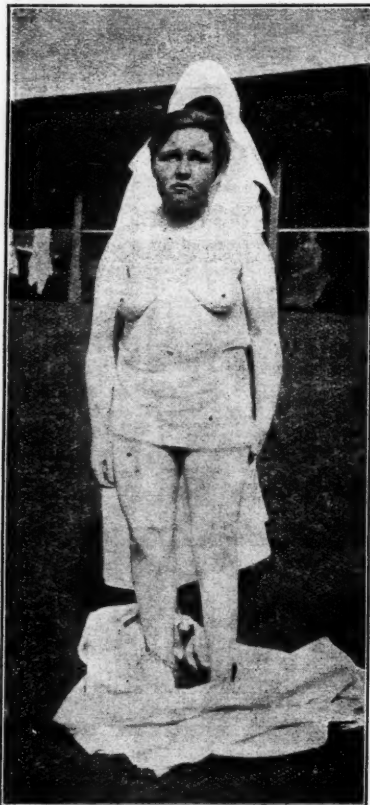
The importance of the presence of a capsule in brain abscess is indicated and the mechanical difficulties of draining acute abscesses without a capsule in an adequate manner are fully dealt with. The author illustrates his encephaloscope for viewing the interior of an abscess. It is a hollow tube of similar pattern to a Kelly's speculum illuminated by a head lamp and fitted over a hollow metal searcher to be inserted into the abscess. It is not clearly disclosed in the text that by the use of the encephaloscope an acute abscess can be more effectively drained.

As a record of the author's personal experiences with full notes of his operation cases and autopsy findings the volume will repay careful study. The mortality of brain abscess is still approximately 75%, but the author is of opinion that with earlier diagnosis and earlier operation his operative results in recent years have greatly improved.

ELEMENTARY ANATOMY AND PHYSIOLOGY.

DR. BUNDY's book on anatomy and physiology for training schools consists of some four hundred pages. The diagrams are clear and the reference tables useful. The author has attempted an impossible task. It is both inadvisable and unnecessary for a nurse or other trainee to have more than a slight knowledge of the subjects concerned.

¹ "Text-book of Anatomy and Physiology for Training Schools and other Educational Institutions, by Elizabeth R. Bundy, M.D.; Fifth Edition, revised and enlarged by Martha Tracy, M.D., D.P.H. and Grace Watson, R.N.; 1923. Philadelphia: P. Blakiston's Son and Company; Demy 8vo., pp. xv. + 419, with a glossary and index and 266 illustrations, including forty-six coloured plates. Price: \$2.50.



CASE II.—The Patient, E.A.

¹ "Brain Abscess: Its Surgical Pathology and Operative Technic, by Wells P. Eagleton, M.D., Newark, N.J.; 1922. New York: The Macmillan Company; Demy 8vo., pp. 316, with forty illustrations.

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The Treatment of the Patient.

IN days long past the student of medicine had to pass through the transition stage of apprenticeship before he received his licence to practise. Today he is required to devote so much time and to expend so much energy in acquiring a superficial knowledge of the sciences of physiology, anatomy, biology, pharmacology and therapeutics, pathology and immunology and so on and so forth that a prolongation of his training beyond the period spent in the medical school and hospital is impossible. If he has ability and good fortune he continues to learn after graduation as a resident medical officer in his hospital in the same atmosphere. The teaching he has received is directed toward the recognition of pathological processes. He is stimulated to make a diagnosis, not merely the naming of the disease from which the patient is suffering, but the visualizing of the changes in the tissues and body fluids associated with a particular stage of the disease. He recalls the appearances of the tissues of special organs as he has seen them in the *post mortem* room; he applies modern tests and, following the train, arrives at his conclusions by deduction. In other words he is taught to concentrate his whole attention on the patient's disease. This attitude is essential and we would not have it otherwise. Little by little medicine is becoming an exact science and empiricism is being cast to the dogs. But this modern doctrine of disease ignores a very important factor, at all events to a large extent. In olden times the family doctor was revered and trusted because he understood what was termed the "constitution" of his patient. It might have been impossible for him to have defined in exact terms what he knew of his patient's idiosyncrasies, but the fact remained that he achieved success in treatment almost intuitively. The apprentice saw him at work; he realized the

almost uncanny perspicacity of his observant master and sought to emulate him. The art of studying the patient, apart from his disease, is becoming decadent. But it is not lost. There are many general practitioners today who recognize that every human being reacts in his own way to the varying extraneous forces and abnormal stimuli associated with disease processes. With extraordinary sagacity and insight Charles Dickens deliberately ignores the pathological process in dealing with the demise of Fannie Dombey and depicts only her peculiar reaction to a past pathological insult. Physiologists tell us that a man or an animal can survive the removal of a certain fraction of his blood or other tissue. Clinicians know that there is another factor in addition to the physical one of quantity concerned in the issue between life and death after a hæmorrhage. Laboratory workers often are embarrassed in their experiments by the unaccountable death of a rabbit after some seemingly harmless manipulation.

That mind has an influence on matter has long been known. The medical practitioner must extend the application of this truism and know that life itself, with its mysterious reactions, responses and retaliations, may introduce the most disturbing modifications in chemical or physical processes involved in disease. He should study his patient's mentality and his bodily idiosyncrasies; he should endeavour to discover some signs to enable him to anticipate an unusual or atypical response on the part of the patient to a known disease; above all he should always remember the patient as well as his disease.

Truly specific remedies are very few. They must, of course, be used on all appropriate occasions. If a child has diphtheria, the practitioner must inject antitoxin without loss of time, because this remedy is specific and curative. If a person has malaria or syphilis, quinine or arsenic or mercury must be given, because these remedies, although not specific, are often curative. But even the child with diphtheria and the adult with malaria or syphilis require individualized treatment, adapted to them as human beings with special qualities of reacting. Encouragement, suggestion, persuasion, perhaps

compulsion are of value in treatment, because they are directed not to the disease but to the patient. We would therefore plead for a revival of the individual treatment of the patient, as a factor in therapeutics scarcely of less importance than the application of scientific knowledge concerning his disease. Incidentally we would deplore that the word "case" has crept into medical terminology, as it tends to relegate the patient to a subordinate position.

Current Comment.

ERYTHRÆMIA.

ALTHOUGH Vaquez in 1892 drew attention to a peculiar form of cyanosis accompanied by persistent relative and absolute polycythæmia, it was not until William Osler in 1903 described the condition that much attention was paid to it. Erythræmia or as it is sometimes called *polycythæmia vera* is recognized to be due to an excessive erythroblastic action of the bone marrow. It is characterized by a persistent increase in the viscosity and total volume of the blood and usually by enlargement of the spleen. It is comparable in many respects to the disorder of the white celled elements of the blood and marrow known as chronic myelogenous leucæmia.

Dr. G. R. Minot and Dr. T. E. Buckman have recently made a study of the disease and have made observations on fifteen patients which they claim throw new light on its manifestations.¹ In the first place they refer to the not infrequent statement that the character of the blood cells is essentially normal and that immature red cells are seldom seen. They have invariably found the red cells changed from normal and in most instances have observed evidence of immaturity among them. Variations may be slight and consist only in a minor alteration in size with the presence of an occasional polychromatophilic red cell. An unevenness of staining is sometimes seen and this may be regarded as due to the presence of cells of different ages. Achromia may be present in addition to varying numbers of macrocytes and microcytes. The number of reticulated red cells may be decreased. This is a feature of experimental polycythæmia. The number of such cells depends on the state of the marrow for the moment and their presence or absence does not indicate the fundamental character of the marrow. An increase also occurs in leucocytes and blood platelets. The changes in the leucocytes are such as may be associated with hasty or abnormal formation. In a case reported by Weber leucopenia was present. The platelet elements in the marrow may be involved as they are in myelogenous leucæmia. They may be found in increased numbers and with megalocaryocyte nuclei in the blood stream. It is

interesting at the same time to note that Saundby and Russel reported an instance of erythræmia in which the marrow was found to be normal on microscopical examination. Drs. Minot and Buckman refer to the view of some observers that myelogenous leucæmia is really a form of neoplasm in which the abnormal proliferation in the marrow is reflected in the blood stream and to Ward's statement that the proliferative process in erythræmia is not disorderly enough to support the theory that it is in the nature of a neoplasm. Their opinion in this regard is different from that of Ward. They have observed a very disorderly type of blood formation with extra-medullary hæmatopoiesis and are, therefore, in favour of the view that the disease is inherently a malignant hyperplasia. They point out that the disorderly signs are not always observed because it requires some time before the condition is sufficiently advanced to permit the delivery into the blood stream of cells which are definitely abnormal. Patients frequently die before the disease reaches this stage.

Little reference will be found in text-books on medicine to an interesting characteristic reported by Drs. Minot and Buckman in three of their patients. Three of the fifteen persons studied by them developed anæmia. Two of the patients died and one was still living at the time of reporting. All were women. In all the red cell count had been over seven and frequently as high as eleven million cells per cubic millimetre. Splenic enlargement had been present in all three instances for five, eighteen and twenty years respectively. After years of polycythæmia the red cell count began to get less and the hæmoglobin value decreased to a relatively greater degree. Coincident with this drop or shortly afterwards the spleen in each instance increased considerably in size, filling at least the whole of the left side of the abdomen. Shortly before the death of two of the patients the red cell count was about two and a half million cells per cubic millimetre. At this time the cells varied greatly both in size and shape and the red cell picture resembled that of typical pernicious anæmia. The white cell picture at this time was similar to that of myelogenous leucæmia. As the disease advanced the leucocyte count averaged 35,000 per cubic millimetre. In a *post mortem* examination on one of these patients a picture of myeloid transformation was presented in the spleen and liver and to a lesser extent in the lungs, lymphatic glands and suprarenal bodies. The marrow was actively erythroblastic and was filled with an excess of myelocytes and immature elements.

In discussing the relationship between erythræmia and myelogenous leucæmia Drs. Minot and Buckman state that the pathological findings in their patient who came to autopsy, are strongly in support of the hypothesis that the conditions are analogous and that they bear a close relationship. They also refer to Blumenthal's patient with polycythæmia. In this instance many myelocytes were found in the peripheral circulation and at autopsy excessive leucoblastic activity was discovered. In addition they point out that both Winter and Ghiron have recorded findings which indicate that

¹The American Journal of the Medical Sciences, October, 1923.

a patient with a typical leucæmia may develop polycythæmia. The megalocaryocyte elements of the marrow share in the processes of both leucæmia and polycythæmia; in the former condition they may be relatively more involved than the white cells. Drs. Minot and Buckman conclude that there occur instances of erythræmia or leucæmia that illustrate multiple varieties of varying degrees of primary pathological activity of myeloid tissue which usually conforms to a definite type.

In discussing the occurrence of anæmia in their three erythræmic patients, Drs. Minot and Buckman state that the level of the red cells and the hæmoglobin may vary considerably in periods of weeks or months. This fact is often overlooked. They presume that these variations are due to alterations in the equilibrium between blood formation and blood destruction. To begin with they state that there is no evidence that the increase in the number of red cells is due to a decreased rate of blood destruction. They point out that it is easy to suppose that a living organism with polycythæmia might possibly strive to compensate for the increased blood formation by increase of the process of blood destruction. The development of anæmia following polycythæmia would then be explained on the ground that over-compensation occurs and that anæmia is the result of the excessive hæmolytic process. They point out that some evidence was obtained in their three anæmic patients of increased blood destruction. The blood plasma contained a slight excess of bile pigment. The output of urobilin in the stools was found to be increased to three or four times the normal level. Microcytes were also found in the blood. In addition to this they found in many patients considerable variations in the fragility of the red cells. They suggest that the variations in fragility is dependent on the various ages of the cells and on the presence of immature forms. On the other hand at *post mortem* examination of one individual no unusual amount of phagocytosis was revealed in different parts of the body and there appeared to be no increase in pigment deposit. Taking these facts into consideration with the slight amount of increased blood destruction indicated by the clinical signs, they conclude that it is distinctly improbable that the progressive anæmia in the patient was fundamentally dependent upon excessive hæmolysis. Having rejected this explanation Drs. Minot and Buckman state that the anæmia may be explained on the grounds that following years of an excessive active erythroblastic activity the response of the marrow succumbs to the strain and becomes most disorderly and that proliferation of immature leucoblastic and other elements occurs as in myelogenous leucæmia. They accept this degenerative proliferation as the reason for the progressive enlargement of the spleen and liver in this one patient. There is, however, some other factor associated with the splenic enlargement that is not fully understood. Drs. Minot and Buckman state further that another form of altered blood formation other than an embryonic hyperplastic type may account for the development of anæmia. In this connexion they refer to a case reported by Freund in which it was

suggested that the cause of the disease at first permitted stimulation and later became so "toxic" that cessation of blood formation resulted.

REGENERATION IN UNSTRIPED MUSCLE.

THE present state of knowledge in regard to the regeneration of unstriped muscle is unsatisfactory. Two views as to its nature are held. On the one hand many observers have maintained that healing occurs by means of fibrous tissue and on the other hand there are those who believe that the muscle fibres are regenerated by a growth of the muscle cells and that evidence of this is forthcoming in mitosis which they have observed. The former group is the larger. Included in their number are Busachi and Ritschl. Both these men experimented with animals, chiefly rabbits, and came to the conclusion that the scar always consisted of connective tissue. Rindfleisch held that the connective tissue formed the scar and that it subsequently contracted and became absorbed. He believed that the muscular tissue became so approximated that the line of injury was scarcely discernible, but that actual muscle regeneration was very slight. Berry, supporting the muscle regeneration theory, published in 1920 some observations on a wound of the uterus which had been occasioned by perforation with a curette four days previously. He found that an area of necrosis of muscle fibres was surrounded by early granulation tissue and active young muscle cells in which numerous mitotic figures were seen.

The subject has been opened up again by Dr. Donald McIntyre.¹ The specimen examined by Dr. McIntyre was a uterus which had been removed by hysterectomy seven days after perforation with a uterine dilator. Around a central area consisting of lymph exudate and red blood corpuscles enmeshed in fibrin he found a zone of young connective tissue cells. Fibroblasts invaded the central zone. Karyokinetic figures were seen in the young connective tissue cells near the endometrium. Muscle fibres were seen running into the granulation tissue. These muscle bundles were arranged irregularly and tended to run towards the centre at right angles to the long axis of the wound. In the nuclei of the muscle bundles karyokinetic figures were found.

In discussing the picture presented by the specimen, Dr. McIntyre states that it is difficult to furnish absolute proof that these mitotic figures belong to muscle nuclei. He enumerates the points in favour of their being regarded as of muscular origin. In the first place the nuclei surrounding a mitotic figure had the appearance of muscle nuclei. In the second place after staining by Van Gieson's method karyokinetic figures were seen in cells taking up the characteristic muscle stain. Lastly, where division of muscle nuclei was found, the muscle protoplasm appeared to take up the eosin more deeply. This last factor is regarded as being a feature of newly formed muscle tissue. Dr. McIntyre's work is interesting and must be regarded as supporting Berry's conclusion.

¹ The Journal of Pathology and Bacteriology, October, 1923.

Abstracts from Current Medical Literature.

SURGERY.

Duodenal Hernia.

EDMUND ANDREWS (*Surgery, Gynecology and Obstetrics*, December, 1923) discusses the subject of duodenal hernia. His attention was directed to the condition by discovery of an instance in the abdomen of a patient who had suffered distress for many years. At operation the entire small intestine with the exception of a few centimetres at the upper and lower extremities was found to be enclosed in a sac of peritoneum. Incision of the sac revealed the fact that the entire contents were matted together by fine cobweb-like adhesions. As the patient's condition did not warrant extensive interference the opening in the sac was merely closed. The author refers to the many studies in the literature on the folds and fossæ found in the neighbourhood of the duodenum. Moynihan enumerated nine fossæ as follows: The superior duodenal fossa, the inferior duodenal fossa, the para-duodenal fossa, the mesocolic fossa, the mesenteric-parietal fossa, the posterior duodenal fossa, the recessus intermesocolicus transversus, the duodeno-jejunal fossa and the infra-duodenal fossa. Moynihan considered only the first five to be of practical importance. It is generally conceded that these small peritoneal pouches are the starting points for hernia. Treitz held that the essentials for the production of a hernia were the existence of a fossa and its boundary folds, the presence of the inferior mesenteric vein in the fold and freedom of movement in the small intestine to such an extent as to permit of its introduction into the hernial sac formed at the expense of the fossa. Moynihan held that the gradual augmentation in size would be effected by the laxity of the retro-peritoneal tissue and the extensibility of the peritoneum. The author states that the absurdity and grotesqueness of this whole conception must be evident from a consideration of certain facts. In the first place differential pressure is utterly lacking. There is no *vis a tergo* to account for the formation or growth of such a hernia. Secondly, there are hundreds of similar folds and fossæ in the peritoneum and they are practically never the sites of such herniæ. Thirdly, in all but a small minority the degree of herniation has been total or subtotal. The author cannot conceive of a force which would, once the process had begun, practically always continue to act until all the gut had been segregated into a sac. In the fourth place an instance has been reported in which such a total hernia was found in a new-born infant. The intra-abdominal pressure *in utero* could not be regarded as the cause of such a hernia. In the fifth place the herniated viscera

are confined to small bowel. Omentum has never been reported as occurring in the sac. Lastly, in many instances there has been an almost universal growing together of the sac. The adhesions are thin and the whole appearance is such as would be encountered in retro-peritoneal tissue. The author reviews the facts concern in the development of the intestine and concludes that duodenal hernia is a congenital anomaly due to imprisonment of the small intestine beneath the mesentery of the developing colon.

Pedunculated Polypoid Fibro-Adenoma of the Stomach.

R. MATAS (*Surgery, Gynecology and Obstetrics*, December, 1923) records the clinical history of a male patient, aged fifty-five years, who suffered from a pedunculated polypoid fibro-adenoma of the stomach. The first abnormality noticed was sudden pain which occurred after a hard day's work sixteen months before his admission to hospital. Attacks of pain recurred at irregular intervals; they were of variable intensity and duration and lasted from a few minutes to a few hours. Each attack was accompanied by shock, a sense of depression, faintness, pallor, nausea and vomiting. No vomiting of blood occurred, but soon after an attack the patient usually passed a dark, tarry stool. As a result of an X-ray examination a diagnosis of ulcer of the stomach was made and immediate operation was advised. At this time the patient presented a very emaciated appearance. No abdominal tumour could be palpated. A considerable degree of anæmia was present, the erythrocytes numbering under two million cells per cubic millimetre. Occult blood was found in the stools on each examination. After transfusion and systematic feeding operation was undertaken. A movable mass was palpated through the wall of the stomach. This was attached to the gastric wall in such a manner that it could block the pyloric opening by acting as a ball valve. The gastric wall was incised and a pedunculated tumour was found. This was attached to the mucosa about twelve and a half to fifteen centimetres from the pylorus. The attachment was three centimetres wide at its base and one centimetre in diameter at its attachment to the tumour. The base was crushed, the tumour removed and the wound in the stomach wall closed. Pathological examination revealed the tumour as a benign adenoma. The author lays stress on the diagnostic problem presented by the patient's history. He also points out that the surface of the tumour contained no site from which bleeding had occurred. The bleeding was caused in this instance by the tumour at the time of its invagination into the duodenum. Myomata of the stomach are the tumours of that organ most liable to progressive hæmorrhage. The author makes reference to the rarity of benign tumours of the stomach. Twenty-

seven benign tumours were observed at the Mayo Clinic during a fourteen year period in which 2,168 malignant growths of that organ were encountered. He deplores the scant attention that is paid to benign tumours of the stomach in differential diagnosis and emphasizes the fact that the most perfect clinical picture of cancer of the stomach may be imitated even to a fatal issue by an operable benign growth.

Cleido-Cranio Dysostosis.

EDGAR F. CYRIAT (*Edinburgh Medical Journal*, November, 1923) describes a case of cleido-cranio dysostosis. The patient, aged thirty-eight years, complained of neuritic pains in the neck and shoulder. No other member of the family was affected. She was employed in heavy work as a housemaid. Her height was 1.46 metres (four feet nine and a half inches). Her shoulders were very sloping. Both clavicles were absent; the right one entirely so; the left shoulder was replaced by a piece of flexible cartilage which was subcutaneous and lay in the position of the normal clavicle. This rudiment was about five centimetres in length and one and a quarter centimetres in diameter at its inner end which bore some resemblance to the shape of a normal clavicle. At the outer end it tapered and ended in a sharp point. It was freely movable, but movement caused pain. The right first rib was distinctly palpable throughout its length, but only that portion of the left first rib uncovered by the cartilage mentioned. The subclavian arteries were subcutaneous and easily palpable. There was complete absence of the clavicular heads of both sternomastoid muscles. The clavicular parts of the *pectoralis majores* were represented by fibres attached to the cartilages of the first ribs. The trapezii deltoid muscles were small and attached to the scapulae alone. No subclavius muscle could be detected on the left side. On both sides the acromion processes were free and the heads of the humeri subcutaneous and easily palpable. During active and passive movement of the shoulder girdle the cartilage representing the left clavicle moved in practically the same manner as the clavicle itself would have done.

Acute Hæmorrhagic Pancreatitis.

A. G. TIMBRELL FISHER (*The British Journal of Surgery*, July, 1923) reports an instance in which two attacks of acute hæmorrhagic pancreatitis occurred in the same individual. The patient was a man, fifty-eight years of age. He was operated on for this condition on May 5, 1922, and made a good recovery, leaving the hospital on July 13 of that year. On March 6, 1923, he was again admitted to hospital complaining of severe abdominal pain. The pain had commenced suddenly on the morning of admission and had been followed by vomiting. The pain had remained

fairly localized. On admission to hospital the patient was in a state of collapse. Abdominal tenderness was most noticeable in the epigastric region, but the abdomen moved slightly on respiration. There was a complete absence of the board-like rigidity usually associated with cataplexies in the upper portion of the abdomen. The author lays great stress on these findings. He states that it is generally held that the presence of a most unyielding type of generalized rigidity is characteristic of acute pancreatitis. This has not been his experience. Localized rigidity in the epigastric region may occur. He is of the opinion that acute pancreatitis presents a definite clinical picture and that diagnosis should be possible by attention to certain distinctive features. He refers to the dicta of Fitz who was a pioneer on the subject. He points out that in the present day it is extremely unlikely that a delay of twenty-four hours in seeking treatment would occur and that for this reason the "circumscribed swelling" would not be found. Many of the signs and symptoms usually attributed to acute pancreatitis are more commonly associated with intra-abdominal hæmorrhage. The author concludes that he would modify the description given by Witz and state that acute pancreatitis is almost certainly present when a person is suddenly seized with violent pain in the epigastrium followed by vomiting, severe collapse and cyanosis and by the symptoms of intra-abdominal hæmorrhage unassociated with typical peritonitic rigidity.

Resection of Small Intestine.

JACOB SARNOFF (*Annals of Surgery*, December, 1923) reports a case of recovery after resection of four and a half metres (fifteen feet) of small intestine and hysterectomy. He states that before performing extensive resections of the small bowel it behoves the surgeon to bear in mind the average length of this segment of the intestinal canal and its more important functions. Quoting Rost, he states that the length of the small intestine ranges from between 5.4 and 7.8 metres (eighteen and twenty-six feet), the average being 5.7 metres. It secretes enterokinase which activates trypsin, and erepsin which reduces albumoses and peptones to crystalline substances. It secretes also lipase, nuclease and carbo-hydrate-splitting enzymes such as lactase. Water is quickly absorbed in the upper part of the small bowel. Carbo-hydrates are absorbed as mono-saccharides and fats when converted into soluble form by the action of fat-splitting enzymes and bile. Absorption of food is completed practically in the small intestine. The jejunum absorbs more fluid and sugar, the ileum proteins and fats. The large bowel absorbs water and sugar. Very extensive resections of small intestines varying from 3.9 to 5.4 metres (thirteen to eighteen feet) have been done, but the

patients nearly all died shortly after the operation. It is a good working rule that one-half of the small bowel may be removed without danger to life, but the resection of 80% of its length is fatal. After the loss of a large area of the small bowel the patient may have diarrhoea, thirst and bulimia. Loss of weight may be rapid, but after a time equilibrium is established. To maintain the nutrition it is best to give large amounts of carbo-hydrates and chopped meat and to lessen the intake of fat. The author's patient was a woman who had been curretted for a miscarriage, the uterus was perforated and the small intestine prolapsed through the wound, the mesentery being injured extensively.

Subperiosteal Resection of Long Bones in Osteo-Myelitis.

HOWARD L. BEYE (*Surgery, Gynecology and Obstetrics*, December, 1923) discusses subperiosteal resection of long bones in osteo-myelitis. He refers to the work of Nichols, Warbasse and Stiles on the subject and to their advocacy of the method under various limitations and conditions. He holds that there are three fundamental errors involved in the procedure. In the first place it is impossible to determine accurately at the time when an operation should be performed just what portion of the involved bone is necrotic. Adequate drainage often allows apparently dead bone to recover. Until a line of demarcation has formed it is presumptive to remove a large segment of infected bone on the assumption that it is doomed. If periosteum is attached to bone, it is presumptive evidence that the bone is living. The extent of medullary involvement is no index of necrosis of the enveloping cortical bone. Healing may take place without sequestration even after pus has been drained from the medullary cavity. Necrotic bone may serve a useful purpose if provision is made for drainage. It may act as a support and by maintaining a proper length prevent angulation of the limb. It may act as a scaffolding upon which new bone grows. The second fundamental error is to assume that regeneration will take place adequately from the remaining periosteum following resection. In stripping the periosteum the most actively osteogenetic portion may be removed with the bone. Stripping the periosteum deprives it of the blood which it receives from the Haversian system. The third fundamental error is that the procedure is very likely to be followed by deformity. The author refers to five patients among three hundred admitted to the University Hospital, Iowa, on whom the operation of resection was carried out. In only one of the five did regeneration occur to a sufficient extent to permit weight bearing by the patient. The bone affected in this instance was the femur. In the remaining four instances the tibia was affected. The

author points out that theoretically these should have been most suitable for this type of operation.

Cardiorrhaphy.

WILLIAM RANDOLPH SMITH (*Annals of Surgery*, December, 1923) discusses cardiorrhaphy in acute injuries. He describes two patients of his own, one of whom recovered. Both were negroes who had been stabbed in the front of the chest. The wounds passed through the pleura and entered the anterior surface of the right ventricle. The wounds were sutured after exposure of the heart. In each patient much blood had collected in the pleural cavity. In tracing the history of heart surgery the author quotes Sherman who said: "The road to the heart is only two or three centimetres in length in a direct line, but it has taken surgery nearly two thousand four hundred years to travel it." In 1896 Farina performed the first suture of the heart, but his patient died of pneumonia on the sixth day. Rehn in 1897 reported the first recovery. The heart is quite tolerant of manipulations, so that it can be handled without harm, but pulling on it may interfere with the bundle of His and produce fibrillation. Apart from the bleeding which may be alarming, the chief danger is the distension of the pericardium with blood and the consequent pressure on the heart or heart tamponade. Immediately after the relief of the pressure in the pericardium the heart may recover to a surprising extent. Hence when the pulse is feeble, no time should be lost in opening the pericardium. Heart wounds heal well by the formation of a fibrous scar. Hæmothorax and pneumothorax are often complications of heart wounds. If the coronary arteries are injured they may be ligated apparently without damage to the heart. The diagnosis of a wound of the heart is not always easy. Many instances have been discovered at autopsy after being overlooked by competent surgeons. External bleeding may be slight or absent owing to the plugging of the pericardial wound with clot. Many patients become unconscious after a cardiac injury. If there are signs of heart tamponade, of internal hæmorrhage or of injury to the pleura and the site of the wound is such that a wound of the heart is possible, it is wise to explore the pericardium. The approach to the heart may be extra-pleural or transpleural. The latter method is quicker and if there is already a wound of the pleura it should be done. The author considers the transpleural as the most suitable method. The pericardium should be opened freely along its long axis and the clot evacuated. It is easiest to hold the apex of the heart with an Allis's clamp while placing the sutures. These may be of silk or catgut. The heart suturing may be done by the continuous or interrupted method. Drainage of the pericardium does not seem necessary.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, 30 to 34, Elizabeth Street, Sydney, on November 30, 1923, Dr. C. H. E. LAWES, the PRESIDENT, in the chair.

Tumour of the Conus Terminalis.

DR. C. G. McDONALD presented a man in whom he diagnosed a tumour involving the *conus terminalis*, and read his notes on the history of the illness (see page 160).

DR. H. R. G. POATE said that his experience of affections of the *cauda equina* and *conus terminalis* were limited to war injuries. He had seen several soldiers who had sustained wounds involving the *cauda equina*. These men had been bedridden and their condition had been very bad. Surgical treatment had yielded satisfactory results in a few patients in whom there had been a degree of traumatic meningitis and in them the most promising treatment was plication of the *dura mater*.

DR. JOHN MACPHERSON thought that Dr. McDonald should be congratulated on the extreme enthusiasm he had displayed in coping with the difficulties and emergencies of his case. It was noteworthy that he had taken endless trouble in devising means for the alleviation of the man's suffering. In this connexion he pointed out that the social embarrassment and suffering attaching to the illness were appalling.

DR. D. J. GLISSAN also added his admiration of the meticulous care with which Dr. McDonald had made his diagnosis.

In reply Dr. McDONALD agreed with Dr. Poate that the war wounds had produced similar symptoms. Root pains might indicate a tumour of the *cauda equina* alone. The symptoms caused by lesions involving both the *conus terminalis* and the *cauda equina* were difficult to distinguish from those of the latter alone. In dealing with the diagnosis he had wished to show that if the lesion were situated in the spinal medulla, it was no higher than the lower lumbar segment. The patient was not prepared to submit to operation. He was comfortable and had learned to manage the apparatus. Moreover, he was not a young man and as long as he felt well, it would be unwise to press him to submit to the risk of surgical treatment.

Acute Hydramnios.

DR. T. FARRANRIDGE read the notes on a case of acute hydramnios simulating an acute abdominal catastrophe (see page 161).

DR. R. I. FURBER, D.S.O., congratulated Dr. Farranridge on the excellent result he had obtained. The condition was one of extreme rarity. Acute hydramnios was usually associated with uniovular twins; the one foetus was affected, while the second was not. He was of opinion that Dr. Farranridge had adopted the correct treatment in releasing the fluid at a slow rate, to provide against undue shock.

DR. P. FIASCHI, O.B.E., referred to Fournier's work on hereditary syphilis which had been published in 1904. Fournier had dealt with many questions relating to hydramnios. He had held the view that hydramnios was a sign of hereditary syphilis as was gemination. He asked Dr. Farranridge whether his patient's serum had been examined by the Wassermann test.

DR. A. J. GIBSON congratulated Dr. Farranridge firstly on having made a correct diagnosis in a very difficult case and secondly in having instituted the correct treatment. He, the speaker, had not heard of so acute a case as this one. The usual variety of hydramnios was the sub-acute. In this variety there was usually a definite thrill to be elicited. When twins were present it was not possible to get the thrill to carry through the abdomen as distinctly as in hydramnios.

DR. H. R. G. POATE called attention to the admirable manner in which Dr. Farranridge had described the condition of his patient. He had presented a word picture

with such clarity and accuracy, that they had no difficulty in visualizing the dangers and difficulties with which he had been faced. Few medical men had the aptitude of conveying a clear picture in a clinical description.

DR. JOHN MACPHERSON said that Dr. Farranridge's case reminded him of the most remarkable obstetrical event he had ever encountered. In his patient there had been detected a fluid thrill over a large area, occupying the greater part of the abdomen. The patient had miscarried and a small foetus had been born. The uterus had remained apparently unaltered in size. After a day or two the abdomen had been opened and a localized, walled-in cavity in the abdomen had been found. He had formed the opinion that the uterus had been perforated with a crochet needle or similar instrument. Pus had been evacuated and the cavity had been drained. The suture area had sloughed at a later date. The intestines coated with lymph and the uterus had been prolapsed out of the wound. After the slough had been removed, the intestines had been returned to the abdominal cavity. At a later date signs of a pleural effusion had been detected. Later the diaphragm had bulged. A high diaphragmatic abscess had formed and sloughing of the tissues had again occurred. The spleen had presented at the wound. Still later the patient had developed a real empyema. She had been kept in hospital for six months and when she had eventually been discharged, she had been a miserable little wreck, a mere bag of skin and bones. Subsequently he had met this patient when she had regained her former robust health. This patient had exhibited a very remarkable recuperative power.

DR. D. J. GLISSAN thanked Dr. Farranridge for the very dramatic and graphic description he had given of the events of his patient's illness. He agreed with Dr. Poate that his account was unusually admirable.

DR. A. DAVIDSON regretted that the attendance at the meeting was so poor. Possibly it was a reaction of the Congress. The speakers had given them admirable papers. They reflected credit on the Medical School of their University.

In his reply Dr. FARRANRIDGE said that he had not had the Wasserman test carried out with his patient's serum. She had appeared to be healthy and there had been no indication of any syphilitic lesion. Both infants had been born alive and neither had manifested any stigmata. He had endeavoured to elicit a thrill, but the intense tenderness of the patient's abdomen had prevented him from obtaining a good result. He thanked Dr. Poate and the other speakers for their flattering remarks.

Orthopædics in America.

DR. C. NIGEL SMITH read a short paper on his experience of some orthopædic clinics in the United States of America and of the work of some orthopædic surgeons (see page 153). He also displayed some apparatus employed by these surgeons.

In the course of a short discussion Dr. H. R. G. POATE said that he had hoped that Dr. Nigel Smith would have given much more detail of the work he had witnessed and of the apparatus he had brought with him. He had tried beef bone screws, but had not tried the plates, chiefly because the brittleness of the bone made them difficult to fashion. The fact that these screws and plates were absorbable was a greater advantage. They were easily handled.

DR. D. J. GLISSAN asked Dr. Nigel Smith whether the adaptation of Lovett's frame could be employed as a complete extension unit. It was important that the limb should be abducted or adducted, as the need arose, without removing the extension. He spoke of an extension apparatus which had been made by the carpenter at Saint Vincent's Hospital in which this could be effected.

DR. NIGEL SMITH stated that both abduction and adduction could be carried out in the frame without releasing the extension. He pointed out that beef bone plates were extensively used at the Mayo Clinic. He exhibited some bone specimens to illustrate the strength and effectiveness of the screws and plates. He also demonstrated the working of Albee's bone saw for cutting grafts.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

ON November 2, 1923, the Cancer Research Committee of the Senate of the University of Sydney presented a report to the Senate. We have delayed publication in anticipation that definite action would be taken by the Senate. As no announcement has been made, the report is now published.

Report on the Organization of Cancer Research.

It will be remembered that at the end of the year 1921 there was appointed a Cancer Research Committee to investigate the possibilities of cancer research under the auspices of the University of Sydney. This Committee deputed to a sub-committee (called the Committee of Direction and consisting of the Professors of physics, organic chemistry, physiology, pathology and surgery) the work of making preliminary investigations as to hopeful lines of inquiry into the origin of malignant disease.

Though the death of Professor Pollock and the absence of Professor Read in Europe and other subsidiary causes have interfered with the work of the Committee of Direction, it now feels that it has made sufficient advance to enable it to place before the Cancer Research Committee arguments in favour of the initiation by the University of a cancer campaign in New South Wales and in favour of the collection of money to form a cancer fund; suggestions as to the establishment of a cancer research institute at the University and some details of a scheme which may be considered useful as a basis of discussion.

(1) The scourge of cancer which, in spite of the enterprise of surgeons, destroys the life of one out of every seven persons above the age of thirty years (according to the best British statistics) and one of every ten above the age of thirty years in the Commonwealth is admittedly on the increase and statistical investigations show that malignant disease is much more prevalent now than it was twenty years ago. Britain has at last been compelled to organize her forces to ascertain if possible the cause of malignant disease and Australia should not lag behind. To quote from a recent issue of *The British Medical Journal*: "During the war we had ample evidence of the capacity of this Empire for united and intensive effort and in no field was it more effectively shown than in the relief of suffering and the prevention of disease. Surely it is not too much to hope that the same spirit will animate our people, when they are called upon to wage war against the enemy in their very midst, so as to bring relief and hope to those whose lives are darkened by suffering and despair."

(2) At the first meeting of the Committee it was resolved that the problems of cancer research are such that they should be investigated by a group of experts rather than by a single investigator and that the Committee was prepared to undertake cancer research as a team.

(3) That this was a correct decision is borne out by recent events. In Great Britain there has been initiated a movement the object of which is to coordinate the activities of cancer research organizations in the British Isles. Chemistry, physics, medicine, surgery, radiology, pathology, hygiene and statistics will be represented by committees whose work will be controlled by an executive council. This council will attempt to create a central clearing house to bring under the notice of all workers the results of investigations carried out along the different lines, thus encouraging team work of the most efficient type.

(4) During the last twenty years great progress has been made in our knowledge of malignant disease in three directions: (a) In research into its origin, (b) in its treatment by surgery, (c) in its treatment by radiations (X-ray and radium). At present the tendency is to combine these three different forms of activity into some kind of organization, where the results of one set of workers are made known to the others. Hence the necessity for close cooperation between research workers,

clinicians and radio-therapists. The University, therefore, is not exceeding its functions if as a trustee for the public welfare it takes an active part in stimulating interest in cancer research, investigates such methods of treatment of malignant disease as may throw light upon its origin or result in its cure and appeals to the public for funds to carry out these objects. It must not be forgotten that the research side is of fundamental importance from the University's point of view, though the popular imagination may be stirred by the great possibilities of the radiation method of treatment, which may in time render unnecessary a certain proportion of surgical operations for malignant disease. As our knowledge of the mode of action of radiations upon normal tissues and malignant growths is still in its infancy, caution must be exercised lest there be disappointment. Hence scientifically controlled therapeutics should form an integral part of any scheme of cancer research.

(5) The University must retain the confidence of the public, so that all interested can work together for the common good under its aegis. Persons likely to foster research will probably trust the University with the administration of their endowments rather than any other organization at present existent in New South Wales. The late Mr. J. F. Archibald might be held up as an example to others. It is necessary that some action should be taken soon, for Great Britain has set on foot a movement to collect money for cancer research from her dominions overseas and it is advisable to prevent money being diverted to Great Britain which would be so useful here. Hence the University should forthwith make known throughout New South Wales its objects and its wants in regard to cancer research.

(6) The University will be able to argue that it has laboratories and equipment of which use could be made pending the establishment of a cancer institute; that it has a staff of experts in all departments necessary to modern cancer research and that it has already in existence machinery which with some additions and modifications would be useful, *videlicet* a cancer research committee to administer funds and a committee of direction to direct research.

(7) Above all, it is imperative that the University should be able to show that money entrusted to its care for this special purpose will be used intelligently and that it will be no party to ill-considered schemes which may result in futility, waste and disappointment.

(8) Having formulated these general conclusions the Committee of Direction has given attention to details. It favours a fully developed scheme comprising the establishment of a cancer institute in a building within the grounds of the University and governed by the Senate. For the erection, equipment and maintenance of such an institute, subsidizing of workers *et cetera* £100,000 would not be too little, say £30,000 to be devoted to building and equipment and the interest of £70,000 for maintenance *et cetera*. Pending the finding or the training of a person suitable to be director of such an institute the members of the Committee of Direction with some re-arrangement of their University duties would be enabled to devote a portion of their time to the prosecution of research into biological, physical, chemical, physiological, pathological and surgical problems according to a definite plan.

The above report was adopted and Professor H. G. Chapman was appointed a member of the Cancer Research Committee.

A meeting of the Senate of the University of Sydney was held on February 4, 1924.

The following appointments were made:

Dr. J. C. Storey, Dr. E. M. Fisher, Dr. R. J. Silverton, Dr. L. G. Teece and Dr. C. L. Chapman, part-time demonstrators in anatomy.

Dr. B. T. Edye to deliver a series of surgical anatomy demonstrations.

Dr. H. J. Wilkinson, demonstrator in histology.

Dr. O. Latham, demonstrator of histological technique.

Mr. R. E. Murray, part-time demonstrator in anatomy and histology.

Dr. F. A. Maguire, lecturer in anatomy.
 Mr. E. F. McIntosh, demonstrator in pharmacy.
 Dr. J. I. Cosh, acting-lecturer in clinical medicine at Royal Prince Alfred Hospital.
 Mr. I. S. Turner, demonstrator in physics.
 The following examiners were appointed:
Medicine.—Professor A. E. Mills, Dr. C. Purser, Dr. S. A. Smith.
Surgery.—Professor F. P. Sandes, Dr. H. S. Stacy, Dr. R. B. Wade.
Obstetrics.—Dr. J. C. Windeyer, Dr. S. H. MacCulloch.
Gynaecology.—Dr. F. Barrington, Dr. G. Armstrong.
Clinical Medicine.—Dr. S. Gillies, Dr. John MacPherson, Dr. H. J. Ritchie, Dr. J. M. Gill, Dr. H. Marshall, Dr. J. I. Cosh.
Clinical Surgery.—Dr. S. J. McKelvey, Dr. A. Aspinall, Dr. G. H. Abbott, Dr. C. E. Corlette, Dr. R. Gordon Craig, Dr. St. J. W. Dansey.

It was decided that Mr. I. Clunies Ross be appointed for a further period of three months to the Walter and Eliza Hall Fellowship in veterinary science.

A letter was received from Dr. H. S. H. Wardlaw, enclosing a cheque for thirty guineas for a prize to be awarded annually to a student in medicine who submits the best essay on a subject connected with obstetrics. It was decided that the gift be accepted with thanks and that the matter be referred to the Faculty of Medicine to draw up conditions under which the prize shall be awarded.

Public Health.

QUEENSLAND.

THE COMMISSIONER OF PUBLIC HEALTH OF QUEENSLAND, DR. J. I. MOORE, has presented the Annual Report of the Department of Public Health of Queensland for the year ended June 30, 1923. The document consists of twenty-four pages of matter. Nine pages of these are devoted to the report proper and fourteen to numerous appendices. In his opening sentences the Commissioner states that he furnishes particulars regarding the work of the Department together with comments regarding the public health in the State of Queensland.

Statistics.

The estimated population of Queensland for the year 1922 was 790,239 persons. The crude birth rate was 25.53 per thousand of population. In this regard Queensland occupied third place among the Australian States. Tasmania heads the list with 27.07 per thousand and New South Wales is second with 25.68 per thousand. In common with most other States, the crude birth rate is lower than in previous years. In Western Australia the birth rate in 1921 was 23.43 per thousand, in 1922 it was 23.96. The birth rate in Queensland was 26.59 per thousand in 1921, 26.23 in 1919, 28.41 in 1918 and 29.05 in 1917. The death rate for 1922 was 9.14 per thousand as against 9.34 in 1921. Queensland occupies third place in the smallness of its death rate. New South Wales has the lowest death rate, 8.92 per thousand and South Australia is second with 9.10 per thousand. The infantile mortality rate for 1922 was 50.5 per thousand as against 54.1 in 1921. South Australia is the only Australian State with a lower infantile mortality rate (47.3 per thousand). "Not only is the high death rate in infants due to hereditary causes, but it is principally due to lack of knowledge in infant feeding." The Commissioner expresses the opinion that as clinics increase and are used more by mothers, the causes contributing to the present infantile death rate should be greatly removed.

Infective Diseases.

Anchylostomiasis.

Only eleven cases of anchylostomiasis were notified during the year as compared with one hundred and seven in the previous year. Dr. Moore attributes the reduction to the work of the Australian Hookworm Campaign. He pays a tribute to the work of the staff of the Campaign

and adds that it remains for the local authorities to see that there is no "recurrence of the conditions which made the presence of the disease so marked."

Diphtheria.

The number of cases of diphtheria notified during the year was seven hundred and fifty-five as against thirteen hundred and seventy-one for the previous year. The opinion is expressed that the reduction in numbers may to some extent be due to the elimination of suspicious cases which subsequently failed to receive bacteriological confirmation. It is claimed, however, that the strictest isolation of patients and carriers has largely contributed to the prevention of the spread of the disease. Apparently no testing for the discovery of susceptible individuals by means of the Schick test was carried out. At the same time seven thousand seven hundred and fifty-six "diphtheria cultures" received from various institutions were examined at the Laboratory of Microbiology and Pathology. The number probably refers to swabbings. As was pointed out in a résumé of a report of this department for a previous year it is more than likely that the distances from which specimens have to be sent militates very much against the isolation of Klebs-Löffler bacilli from faucial and nasal swabbings.

Influenza.

Three hundred and forty cases of influenza were notified for the year as against one hundred and seventy-five for the previous year. The type of infection was more virulent than that of the preceding year, but was not as lethal as "the imported type which was known as pneumonic influenza."

Pulmonary Tuberculosis.

The number of cases reported in the Brisbane metropolitan area and the area outside the metropolis was respectively one hundred and fifty-eight and two hundred and fifty-four. This number was one hundred and six less than the number for the preceding year. One hundred and thirteen patients were examined with a view to ascertaining their suitability for sanatorium treatment. Two hundred and twenty-six out-patients were seen and four were visited in their own homes. It is satisfactory to note that a staff nurse is employed by the Department. During the year this nurse paid one hundred and eleven visits to patients in their homes. A careful inquiry is made into the environment of patients and advice is given when necessary.

Plague.

No cases of plague occurred during the year. Since October 31, 1922, no plague bacilli were detected in any rodent in any district within the State.

Typhoid Fever.

The notifications of typhoid fever for the metropolitan area numbered two hundred and those outside this area two hundred and fifty-eight. This was an increase of ninety-two on the number for the previous year. Reference is made to a campaign against flies and it is mentioned that supplies of anti-typhoid vaccine have been supplied to local authorities some of whom realize its value in protecting those in rural districts from the disease. It is a pity that more exact information is not forthcoming in regard to this very important aspect of the prevention of disease.

Venereal Disease.

Considerable space is devoted to the discussion of venereal disease. During the year eighteen hundred and seventy-nine notifications of venereal diseases were received. Of this number fifteen hundred and eight were in regard to gonorrhoea and one hundred and forty-one in regard to primary syphilis. The number of infections for the previous year was eighteen hundred and fifteen. It is interesting to see that there is not much falling off in the numbers notified from the clinics controlled by the Department in Brisbane. The number notified from this institution was three hundred and eighteen against three hundred and thirty-seven for the previous year. Twenty-

five women were treated at the Venereal Isolation Hospital and twenty-three of these were prostitutes. They were detained under the sections of the *Health Acts*. The other two sought admission voluntarily. Fifteen of the total were discharged as cured or apparently free from disease. Five prostitutes found on examination to be infected with venereal disease absconded before orders could be obtained for their detention. At extra-metropolitan centres twenty-five prostitutes were detained. A brief review is given of the prosecutions in connexion with venereal disease. One conviction was obtained for illegally treating venereal disease. The difficulty of administering the act is evidenced in the fact that the police were asked to interview one hundred and fifty male patients for failure to continue medical treatment. No trace could be found of seventy-five of these persons. Replies were awaited in regard to forty-five of them. Form F. (the complaint of one person against another) was received on fifteen occasions. One was in regard to a male and it was found that he was infected. The remainder were in regard to females and nine were found to be infected. Form G. (those suspected by the Commissioner) was issued on sixty occasions. Forty-nine were in regard to males and thirty-two were found to be infected. The remainder were in regard to females and ten were found to be infected.

The Control of Sanitation and Foods.

The remainder of the report is devoted to the consideration of the measures taken in regard to the control of sanitation, food and nurses' registration. In a previous résumé of an earlier report from this Department we drew attention to the fact that the Commissioner relied on the analysis of samples of milk and the prosecution of vendors of watered milk for safeguarding the milk supply of the people of Queensland. No attention apparently was paid to the presence of bacteria. It would appear that no alteration has been made in this method of control.

LUNACY IN SOUTH AUSTRALIA.

In former years a considerable amount of the space of this journal was devoted to the records of the activities of the various public health departments in the Commonwealth. All of these are of the greatest importance to the medical profession and to the community in general. Since the administration of the laws governing the hygienic safety of the people is a duty of governmental departments, it is essential that these activities should be examined in a critical light. For some time it has been impossible to reserve space for these matters, owing to the ever increasing amount of clinical and other information emanating from the several Branches of the British Medical Association in Australia. While the Branches are in vacation we seize an occasional opportunity of discussing one or other of these problems.

The Inspector-General of Hospitals of South Australia issues each year a report on the institutions under the *Mental Defectives Act* and attached to his report a report of the Mental Defectives Board. In these reports the subjects of lunacy and mental deficiency in their relation to the public are not handled. The task of the Inspector-General appears to be restricted to the conduct of the two institutions for the insane—the Mental Hospital, Parkside, and the Enfield Reception House, and the care of the patients in these institutions. Little or no information is vouchsafed in regard to the control of patients on leave or of those kept under the care of discharged patients. The subject of mental deficiency proper is illogically surrendered to the State Children's Board, as if mental deficiency were a condition affecting children and not adults. In the past we have called attention to the defects attaching to the Mental Hospital, Parkside, and to some of the arrangements concerned with the care of mentally defective children.

The Mental Hospital.

In Dr. Bedlington Morris's report for the year 1922 which was issued late last year, we note that many of the

more important defects still awaited remedy. A new laundry has been erected on modern lines and, judged from the illustrations contained in the report, it is well planned and well equipped. The old laundry was extremely bad. A new observation ward for male patients was opened during the year. A similar ward for female patients is urgently needed and may be provided in the near future. The accommodation for nurses continues to be unsatisfactory. Formerly the night nurses were required to sleep in close proximity to a ward occupied by noisy patients. Now some of the nurses are housed outside the institution, while the main quarters are in the building formerly the laundry. The lighting of the institution is still very unsatisfactory. For some years the Inspector-General of Hospitals has asked for electric light, but so far in vain.

Dr. Bedlington Morris has still cause for bitter complaint on account of the want of adequate accommodation for the certified insane. The Reception House has been opened and has to some extent relieved the extreme pressure on the Mental Hospital. The latter, however, is overcrowded and a second mental hospital is now a necessity.

Statistics.

During the year 1922 two hundred and seventy-seven persons were admitted to the Mental Hospital. Of these one hundred and ninety-three were admitted for the first time, fifty-five were re-admitted and twenty-nine were returned from trial. The admission rate is given at 4.82 per ten thousand of population. In Queensland it is 6.74, in New South Wales it is 5.94, in Victoria it is 5.64 and in Western Australia it is 4.36. If this rate could be accepted as an index of the amount of insanity in the population, it would seem that South Australia is second only to Western Australia among the Australian States.

Of the persons admitted during the year forty-five or 18% were under thirty years of age, one hundred and eleven or 44.75% were between thirty and fifty years of age and ninety-two or 37% were over fifty.

The number of patients admitted has increased gradually during the past fifty-five years from sixty-three. The highest number in any one year is three hundred and two in 1916. The average for the past ten years is two hundred and seventy-nine.

The average number of patients in residence at Parkside during 1922 was eleven hundred and ninety-four, while on December 31, 1922, there were twelve hundred and seven in the hospital. The total number of persons under treatment during the year was fourteen hundred and sixty-seven. Of these ninety-six died, one hundred and sixty-three were discharged and one escaped and was not recaptured. Of those discharged one hundred and thirty are listed under the rubric of "recovered." Dr. Morris gives the recovery rate at 46.90%. This method of calculation is, in our opinion, not a happy one, as has been pointed out on several occasions. In the first place it is based on the number of "admissions," not of persons. The admissions include persons who were not suffering from insanity and who were discharged as soon as the erroneous diagnosis was corrected. In the second place it ignores the subsequent history of the patients. At the time of discharge the evidence of insanity has disappeared. Some of these patients relapse; in others a fresh mental illness develops at a later date; in others still it is unknown to the authorities whether they remain sane or insane, since the relatives do not provide opportunity for a psychiatric control. On the other hand the figures serve a useful purpose in comparing the result of treatment year by year. The average recovery rate for seventy-six years from 1846 to 1922 was 54.2. The highest figure was 76.4 in 1874 and the lowest 41.1 in 1906. It is disappointing to find that in 1922 the recovery rate of 46.9 ranks among the lowest in the long series of years. It is useless to discuss the prognosis of mental diseases grouped together in relation to modern methods of treatment. To do this satisfactorily it would be necessary to divide these diseases into two main classes, those dependent on gross pathological changes in the brain and those apparently dependent on psychical disturbances of a functional

nature. These could be further subdivided into ætiological classes, in which destructive lesions should be differentiated from recoverable changes and persistent causes should be distinguished from temporary ones. No attempt is made to provide information of this kind. Even in the tables dealing with the attacks of mental disease for which admission was obtained, no attempt is made to separate first attacks and relapses or subsequent attacks.

Form of Mental Disease.

Of the two hundred and forty-eight persons classed as re-admissions ten were suffering from congenital mental deficiency, fifty-six were suffering from insanity in which heredity was a predisposing cause, sixteen were suffering from insanity caused by alcohol, other poisons or venereal disease, four from climacteric and six from senility insanity, twelve were suffering from insanity due to fright, other forms of mental stress or disease of the nervous system and one from traumatic insanity. In one hundred and forty the cause was unknown.

Of those discharged forty-nine had had mania, twenty-three had had melancholia, twenty-one had had delusional insanity, thirteen had had dementia, ten had had *dementia præcox*, fourteen had had alcoholic insanity, five had had insanity of pregnancy or the puerperium, four had had stupor, five had had epileptic insanity, five had had idiocy or imbecility, two had had confusional insanity and eight had had climacteric insanity. How far the use of the term "recovery" is justified in one hundred and thirty of these one hundred and sixty-three persons it is impossible to determine. The prognosis in the majority of the affections named is certainly not promising.

Enfield Receiving House.

At the Enfield Receiving House, which was opened on June 22, 1922, ninety-seven patients were admitted up to the end of the year. This number includes fourteen who were discharged at the end of two months and re-committed by their friends for further treatment to comply with the provisions of the Act. The actual number of persons is therefore eighty-three. About one-half were suffering from first attacks of insanity. Twenty-five were discharged as recovered. Eighteen were discharged as relieved and nine as not relieved and twenty-eight were transferred to the Mental Hospital, Parkside. There were no deaths.

The Receiving House is a well planned and modern institution, equipped with the necessary means of carrying out treatment of mental disease for short periods. It is in the care of two visiting medical officers and a highly competent matron. The staff is not large, but is probably sufficient for the institution. The quarters are good. There is accommodation for forty-three patients. In 1922, the average number of patients in residence at one time was under nineteen.

MILK SUPPLY IN VICTORIA.

In 1922, as a result of continued and urgent pressure from hygienists, sociological institutions and enlightened citizens, the Parliament of Victoria placed on the Statute Book an enactment entitled the *Milk Supply Act*. In spite of the extreme importance attaching to the introduction of measures aiming at the improvement of the supply of milk and its distribution, the regulations under this Act have not been gazetted until January 22, 1924. The Regulations are as follows:

1. These Regulations may be cited as the *Milk Supply Act 1922 Regulations 1924*.

2. Interpretation—

"Bottled milk" means milk sold in glass, metal or other approved containers.

"Consumer" means any person, whether as principal or agent, directly or indirectly receiving milk from a dairy farmer, depôt or dairy, intended for consumption by himself or another.

"Dairy farmer" means any person who holds a licence for a dairy farm issued under the Dairy Supervision Act for premises upon which cows are milked for the purpose of producing milk for sale as milk within the metropolitan area.

"Dairyman" means the owner or person in charge of premises within the metropolitan area for which a licence under the Dairy Supervision Act has been issued and from which milk is sold or delivered retail.

"Metropolitan area" means the municipal districts of the municipalities specified in the Schedule to the Act.

"Milk" means the normal product of the udder of an animal without addition or subtraction.

"Pasteurized milk" means milk which has been heated to a temperature of not less than 145 degrees Fahrenheit and held at such temperature for not less than thirty minutes and immediately after reduced to a temperature below 40 degrees Fahrenheit.

3. The maximum temperature at which milk shall be kept forthwith after production until disposed of by the producer to a depôt, dairy or consumer shall be the temperature of the coolest water available on the farm upon which such milk is produced.

4. Every dairyman shall, on receipt of any milk, cause the same to be immediately and efficiently cooled to a temperature not greater than 40 degrees Fahrenheit. Provided that if the milk has been efficiently cooled below 40 degrees Fahrenheit at the centre of production and is received by a dairyman below a temperature of 50 degrees Fahrenheit, further cooling to 40 degrees Fahrenheit or under shall not be necessary.

5. When any dairy farmer produces milk for sale within the metropolitan area and sells such milk direct to the consumer, the cooling of such milk to 40 degrees Fahrenheit or under shall not be necessary, provided that all such milk is sold within two hours of the time of production.

6. No person shall hold or store any milk for sale unless the same has been efficiently cooled to a temperature below 40 degrees Fahrenheit and is held or stored in a cool chamber or ice chest and no milk shall be sold unless the same is below a temperature of 60 degrees Fahrenheit.

7. The lowest grade of raw milk which may be received by any dairyman from any dairy farmer shall be milk containing not more than 500,000 organisms per cubic centimetre.

8. The lowest grade of raw milk which may be received by any dairyman within the metropolitan area shall be milk containing not more than 2,000,000 organisms per cubic centimetre.

9. No milk which has been Pasteurized in any dairy or factory situated outside the metropolitan area and which is intended for sale within the metropolitan area shall contain more than 300,000 organisms per cubic centimetre at any time before Pasteurization.

10. No Pasteurized milk shall be sold within the metropolitan area which contains more than 500,000 organisms per cubic centimetre.

11. No person shall sell as bottled milk any milk unless the same has been bottled at a dairy and is delivered to the customer in the state in which it leaves the dairy.

THE INTERNATIONAL UNIVERSITY SOCIETY AND LITERARY BUREAU.

In the year 1878 there was founded in Nottingham, England, a society having for its objects the elevation of the plane of thought in the home, the assistance of the busy business man who wishes to be better informed, and the promotion of higher education of the young. This society was called the International University Society and Literary Bureau. The committee of management of the society set to work to enrol members to whom they supplied printed information on subjects of scientific, economic, political and general interest, compiled by recog-

nized authorities. Branches have been opened in the course of forty-five years in London, Glasgow and Sydney. The membership stands today at one hundred thousand.

Members are entitled to brochures containing an outline of the first principles of science by eminent scientists, a series of articles on British history, on colonial history, on ancient history and modern European history, on literature, on ethics and philosophy, on political economy, on religion, on constitutional law and so on. In addition authoritative replies are provided to special questions arising out of the subjects included in the fifteen brochures.

In order to convey a clearer conception of the methods followed by the International University Society and Literary Bureau, we may take the instance of the first principles of science. A simply worded and informative article by Dr. W. Peddie, F.R.S.E., is issued in which the author sketches a sort of itinerary for the student seeking accurate knowledge of Nature's laws. He refers to the various brochures in connexion with each great division of scientific thought, touching lightly on doctrines and discoveries in physics, chemistry, physiology, geography, biology and so forth. The secret of his clever introduction is to guide rather than to teach. At the end of the booklet is attached a series of twenty-seven well chosen questions with appropriate replies, indicating how the seeker after truth may accomplish his aim. For example the first question is: "What is meant by the survival of the fittest? How did the species originate?" The reply is: "Trace development through Charles Darwin's Address, Section VII, pages 81 and 82." The Society supplies the reading in handy form and at the same time indicates to members where fuller information can be obtained.

Application for membership can be made on printed forms which will be sent by the Director for Australia, Merino House, 59, York Street, Sydney, New South Wales. The society deals with applications in order of receipt. As soon as the candidate is admitted a corresponding member of the society, he receives a certificate and the "text matter" in seven sections. The reading course is sent in monthly instalments during the course of fifteen months. At the end of that time the membership ceases and the printed matter supplied becomes his property. The subscription is one pound a month for ten months.

In addition to the large mass of printed matter gradually issued to all members, the replies to questions represent a valuable foundation to knowledge. The information is largely used for the purposes of debate, as an aid in the preparation of public lectures and in order to place busy men in the position of conversing intelligently on subjects not ordinarily included in their daily avocation. It is an admirable institution and can be warmly recommended to medical practitioners.

Naval and Military.

APPOINTMENTS.

The following appointments, changes *et cetera* have been promulgated in *Commonwealth of Australia Gazette*, Nos. 4 and 10, of January 17 and February 7, 1924:

Australian Military Forces.

FIRST MILITARY DISTRICT.

Unattached List.

CAPTAIN R. O. DOUGLAS is transferred to Unattached List, 3rd Military District, 1st December, 1923.

Australian Army Medical Corps.

To be Captain (provisionally)—KENNETH JOSEPH GILMORE WILSON, 20th December, 1923; MAJOR J. G. AVERY and CAPTAIN R. WALLACE are transferred to the Reserve of Officers, 15th November, 1923, and 22nd December, 1923, respectively.

SECOND MILITARY DISTRICT.

Australian Army Medical Corps.

To be Captain (provisionally)—SALVATORE UMBERTO GEN-
TILE, 1st December, 1923.

Unattached List.

COLONEL J. M. Y. STEWART, C.B.E., D.S.O., V.D., is placed on the Retired List, with permission to retain his rank and wear the prescribed uniform, 14th December, 1923.

Reserve of Officers.

To be Captain—K. M. GARRETT, 1st January, 1923.

Australian Army Medical Corps.

CAPTAIN J. A'B. D. BARTON is placed on the Retired List, with permission to retain his rank and wear the prescribed uniform, 4th February, 1924.

Unattached List.

COLONEL J. A. DICK, C.M.G., V.D., is placed on the Retired List, with permission to retain his rank and wear the prescribed uniform, 28th January, 1924.

Reserve of Officers.

MAJOR C. M. PYM is placed on the Retired List, with permission to retain his rank and wear the prescribed uniform, 6th January, 1924. The resignation of MAJOR H. C. ADAMS of his commission is accepted, 4th January, 1924.

Australian Army Medical Corps Reserve.

The undermentioned officers are retired under the provisions of Australian Military Regulation 152 (1) from the dates stated against their respective names: HONORARY MAJOR H. W. J. MARKS, 6th November, 1923; HONORARY CAPTAIN H. H. MONCKTON, 22nd December, 1923; HONORARY CAPTAIN C. S. BOWKER, 17th January, 1924; and HONORARY CAPTAIN W. C. DAISH, 25th January, 1924.

AWARD OF THE COLONIAL AUXILIARY FORCES OFFICERS' DECORATION.

Australian Army Medical Corps.

LIEUTENANT-COLONEL R. DICK.

THIRD MILITARY DISTRICT.

Australian Army Medical Corps.

MAJOR M. W. CAVE, D.S.O., is appointed from the Reserve of Officers, 1st November, 1923; MAJOR C. H. KELLAWAY, M.C., is appointed from the Reserve of Officers, 4th Military District, 1st November, 1923.

DISTRICT BASE.

Staff.

MAJOR C. H. KELLAWAY, M.C., Australian Army Medical Corps, is appointed Assistant Director of Hygiene, District Base Head-Quarters, 1st November, 1923.

Australian Army Medical Corps.

To be Lieutenant (provisionally)—JOHN GERALD HAYDEN, 1st January, 1924; HONORARY CAPTAIN W. L. ARMSTRONG is appointed from the Australian Army Medical Corps Reserve and to be Captain (provisionally), 1st December, 1923; CAPTAIN P. SHAW is appointed from the Reserve of Officers, 1st January, 1924.

Unattached List.

CAPTAIN R. O. DOUGLAS is transferred from the Unattached List, 1st Military District, 1st December, 1923.

FOURTH MILITARY DISTRICT.

Reserve of Officers.

MAJOR C. H. KELLAWAY, M.C., is appointed to the Australian Army Medical Corps, 3rd Military District, 1st November, 1923.

Australian Army Medical Corps.

CAPTAIN AND BREVET MAJOR W. J. W. CLOSE is transferred to the Unattached List, 4th January, 1924.

FIFTH MILITARY DISTRICT.

Australian Army Medical Corps.

CAPTAIN J. R. DONALDSON is appointed from the Reserve of Officers, 1st January, 1924; CAPTAIN (provisionally) A. W. FARMER is transferred to the Australian Army Medical Corps Reserve, and to be Honorary Captain, 31st December, 1923.

Books Received.

- A SHORT PRACTICE OF GYNÆCOLOGY FOR MEDICAL STUDENTS, by Henry Jellett, M.D. (Dublin University), F.R.C.P.I.; Fifth Edition; 1924. London: J. and A. Churchill; Royal 8vo., pp. 450, with 318 illustrations and 10 coloured plates. Price: 18s. net.
- A SYNOPSIS CHART OF SKIN DISEASES FOR THE USE OF GENERAL PRACTITIONERS AND STUDENTS, by B. Burnett Ham, M.D., D.P.H.; 1923. London: H. K. Lewis and Company, Limited; Royal Folio, pp. 8, with two coloured plates. Price: 12s. 6d. net.
- CLEFT LIP AND PALATE, by Truman W. Brophy; 1923. Philadelphia: P. Blakiston's Son and Company; Sydney: Angus and Robertson, Limited; Royal 8vo., pp. 364, with 466 illustrations and coloured plates. Price: 32s. 6d. net.
- GAS POISONING IN MINING AND OTHER INDUSTRIES, by John Glaister, M.D. (Glasgow), D.P.H. (Cambridge), F.R.S.E. Etc., Etc. and David Dale Logan, M.D. (Glasgow), D.P.H.; 1914; Edinburgh: E. and S. Livingstone; Demy 8vo., pp. 483, illustrated. Price: 12s. net.
- HISTORY OF THE GREAT WAR BASED ON OFFICIAL DOCUMENTS: MEDICAL SERVICES—GENERAL HISTORY, in four volumes, by Major-General Sir W. G. MacPherson, K.C.M.G., C.B., LL.D.; Volume II; 1923. Edinburgh: His Majesty's Stationery Office; Demy 8vo., pp. 520, with illustrations. Price, post free: 22s. net.
- INCOMPATIBILITY IN PRESCRIPTIONS AND HOW TO AVOID IT, by Thos. Stephenson, D.Sc., Ph.C., F.R.S. (Edin.), F.C.S.; 1924. Edinburgh: The Prescriber Offices; Demy 8vo., paper cover, pp. 32. Price: 1s. 6d. net.
- PRURITUS OF THE PERINEUM (PRURITUS ANI, VULVÆ AND SCROTII), by Joseph Franklin Montague, M.D.; 1923. New York: Paul E. Hoeber, Inc.; Demy 8vo., pp. 200, with 37 illustrations. Price: \$3.50.
- QUARANTE-TROIS GREFFES DU SINGE À L'HOMME, par le Docteur Serge Voronoff; 1924. Paris: Librairie Octave Doin; Demy 8vo., paper cover, pp. 256, with 38 illustrations in the text.
- RADIOGRAPHY AND RADIO-THERAPEUTICS, by Robert Knox, M.D., C.M. (Edin.), M.R.C.S. (Eng.), L.R.C.P. (Lond.); Fourth Edition; Part. I.—Radiography; 1923. London: A. & C. Black, Limited; Royal 8vo., pp. 473, with 92 plates and one coloured plate and 337 illustrations in the text. Price: 40s. net.
- THE PREVENTION OF DENTAL CARIES AND ORAL SEPSIS, by H. P. Pickerill, C.B.E., M.D.; Third Edition; 1923. London: Baillière, Tindall and Cox; Demy 8vo., pp. 352, with 80 plates and figures in the text. Price: 18s. net.
- THE TOXÆMIA OF ACUTE INTESTINAL OBSTRUCTION, by R. H. Paramore, M.D. (Lond.), F.R.C.S. (Eng.); 1923. London: H. K. Lewis and Company, Limited; Crown 8vo., pp. 74, with one chart. Price: 5s. net.
- THE TREATMENT OF DIABETES MELLITUS, WITH OBSERVATIONS BASED UPON THREE THOUSAND CASES, by Elliott P. Joslin, M.D. (Harvard), M.A. (Yale); Third Edition, enlarged, revised and re-written; 1923. Philadelphia and New York: Lea and Febiger; Sydney: Angus and Robertson, Limited; Royal 8vo., pp. 797, with illustrations. Price: 42s. net.

Medical Appointments.

The undermentioned appointments have been made in the Department of Mental Hospitals, New South Wales: DR. SYDNEY EVAN JONES (B.M.A.), as Medical Superintendent; DR. GAVIN MORTON, as Deputy Medical Superintendent; DR. CHARLES BROWNLOW PYM (B.M.A.), as Deputy Medical Superintendent.

DR. HENRY KENNETH FRY (B.M.A.) has been appointed an Official Visitor to the Mental Hospital at Parkside, South Australia.

DR. C. E. WILLIAMS (B.M.A.) has been appointed Acting Government Medical Officer and (temporarily) Visiting Surgeon to His Majesty's Gaol at Mackay, Queensland.

Medical Appointments Vacant, etc..

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xviii.

ALFRED HOSPITAL, MELBOURNE: Medical Vacancies.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney	Australian Natives' Association Ashfield and District Friendly Societies' Dispensary Balmain United Friendly Society's Dispensary Friendly Society Lodges at Casino Leichhardt and Petersham Dispensary Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney Marrickville United Friendly Societies' Dispensary North Sydney United Friendly Societies' People's Prudential Benefit Society Phoenix Mutual Provident Society
VICTORIA: Honorary Secretary, Medical Society Hall, East Melbourne	All Institutes or Medical Dispensaries Australian Prudential Association Proprietary, Limited Mutual National Provident Club National Provident Association
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane	Brisbane United Friendly Society Institute Stannary Hills Hospital
SOUTH AUSTRALIA: Honorary Secretary, 12, North Terrace, Adelaide	Contract Practice Appointments at Renmark Contract Practice Appointments in South Australia
WESTERN AUSTRALIA: Honorary Secretary, Saint George's Terrace, Perth	All Contract Practice Appointments in Western Australia
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington	Friendly Society Lodges, Wellington, New Zealand

Diary for the Month.

- FEB. 19.—New South Wales Branch, B.M.A.: Medical Politics Committee; Organization and Science Committee.
- FEB. 19.—Illawarra Suburbs Medical Association, New South Wales.
- FEB. 20.—Victorian Branch, B.M.A.: Council.
- FEB. 22.—Queensland Branch, B.M.A.: Council.
- FEB. 22.—Central Southern Medical Association, New South Wales: Annual Meeting.
- FEB. 27.—Central Western Medical Association, New South Wales: Annual Meeting.
- FEB. 27.—Federal Committee of the British Medical Association in Australia: Meeting at Melbourne.
- FEB. 28.—South Australian Branch, B.M.A.: Scientific Meeting.
- MAR. 4.—New South Wales Branch, B.M.A.: Ethics Committee.
- MAR. 5.—Victorian Branch, B.M.A.: Branch.
- MAR. 7.—Queensland Branch, B.M.A.: Branch.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, B.M.A. Building, 30-34, Elizabeth Street, Sydney. (Telephone: B. 4635.)

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and book-sellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad per annum payable in advance.